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AUTOMATIC TEACHING OF READING SKILLS IN HIGH SCHOOL

Mabel S. Noall

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Chapter I

THE PROBLEM

1. Possibilities

This is the report of some explorations into the possibilities of developing reading skills in secondary schools through automatic teaching without use of machines. To qualify as automatic teaching a program must be self-pacing with a flexibility that reflects the individual student's level of achievement, work speed, rate of improvement, and skill needs. Automatic teaching implies multiple track materials, arranged in graded sequence. These materials must give immediate knowledge of results to the student and vary the task in line with the student's performance. Experimentally, this has been done through the use of machines, programmed textbooks, and completely individualized units of instruction.

Individual machines are usually quite expensive. Good ones to use in automatic teaching are not yet available on the open market. Machines have an annoying habit of breaking down at crucial moments. But the most serious handicap to the use of machines is that they place the habituation of the act of learning one step further from learning as it occurs in normal living situations. There is always the possibility of little or no transfer of the ability with the machine carrying over into ability in real life. Completely programmed textbooks also can be expensive, and they offer less flexibility than do the multiple-level unitary materials that are beginning to appear on the market. On the other hand, if we are ever to give more than lip service to meeting individual needs, ways must be found to guarantee learning with the individual working independently. Automatic or programmed instruction seems to offer real possibilities.

Before going further you need to think about two statements to see if you accept them as facts. First, reading is the cheapest and best tool we have at present for adapting education to individual differences. Second, varied skills in reading are basic to growth through reading. If these two basic premises can be accepted, then we are ready to consider several possibilities. These possibilities formed the bases for the investigations reported here.

Is it necessary that high school students read better than they do today? Because of the very increase in the variety and complexity of the offerings, aren't students reading more and also reading better than they ever have before? Is it necessary for them to spend time learning to read better? Wouldn't the increasing amount of reading guarantee that the skills would develop without special training? See Chapter I, "Why Read Better?"

Would it be possible to teach reading skills through self-operating materials? Could these materials be so organized that they could be used by individual students on a self-selective basis without close supervision of the teacher? Could such a program provide for individual differences in (1) intelligence, (2) levels of reading ability, (3) working speeds, (4) progress rates, and (5) skill deficiencies? See Chapter II.

Would this program be suitable for mass instruction? In other words, could over a hundred students work under a single teacher? What would be the difficulties? Would the students progress? Most attempted mass instruction programs depend on large lectures and demonstrations and presuppose

the need for small group instruction for the development of skills. Can there be mass differentiated skills instruction? How well would it work? See Chapter III.

How would this self-directed individualized approach compare with present practices of uniform classroom instruction? See Chapter IV.

Are there special problems in setting up such a program: special pit-falls, or suggestions that would help to make it successful? How could motivation be stimulated and maintained? Wouldn't problems of discipline be increased? Even if these hazards can be overcome, are there materials now available for use? It is granted that more carefully programmed and more thoroughly tested materials would be desirable, but are there materials now available with which a successful program can be built? How can they be prepared for individualized use? Would this be expensive or otherwise prohibitive? See Chapter V. Appendices supply reference lists of many available materials with annotations and approximate prices.

Summary and conclusions will be found in Chapter VI.

2. Why Read Better?

Since ability in reading closely parallels educational attainment (7, Chapter 2), it might be assumed that people in the United States today read better than they did a generation ago. There is no way to guarantee that this assumption is correct, however, because the widening segment of the population being educated may have lowered the standards of attainment at the different educational levels. As to the amount of reading, studies made between 1923 and 1952 indicate that the number of books and magazines read was on the decrease (2, p. 1092). This was true in spite of the expanding quantity of published materials (2, p. 1090). Even with the present sale of 300 million paperbound books per year it is possible that these are being read largely by a small segment of the population. A fairly comprehensive study made in 1946 (6, p. 58) found that 21 percent of the people questioned read 70 percent of the books reported and 50 percent of the people accounted for only 6 percent of the books.

Even if we grant a debatable point and concede that high school students today read better than they ever have before, it is quite likely that they do not read well enough. There are a number of factors in today's world that place a high premium on breadth of reading skills and a superior level of reading power.

In the first place, the possibility of college success, the goal of an increasing number of our high school students, is directly related to skills in reading and the language arts. In an eight-year study on prediction of college success, Jex (5) found that already having the power, rather than having the potential to develop the power, guarantees success in college. When combined with high school grades, high scores on intelligence tests could not predict success as well as high scores on the Cooperative English-Reading Test. Using a weighted score derived from high school grades and Cooperative test results, he found a correlation with college grades of r .70 to .80. This means that high school students must meet this challenge and develop power in the language skills if they expect to be admitted to college. Good intelligence is not enough. The Jex study proves it. Another study (4) found that the lowest fifth of the freshmen students at a large state university were two grade

levels below the average of the freshman class in English and reading test scores, but at the class average in arithmetic and science.

The increase in the high school population (8) places a strain on facilities and finances which is much more easily met if students are good readers. As high school enrollment expands the supply of good teachers is insufficient to meet the demand. The poorer the teacher, the more a student must depend upon himself in the mastery of his subjects, and in this, reading ability can be the difference between success and failure. In a two-year period alone, 1957-58 to 1959-60, high-school enrollment increased 15.8 percent. If a student could read well, he might even be stimulated by the larger classes. If his reading were poor, the stimulation might be translated into frustration.

There seems to be too few teachers for the increasing enrollment. The *National Elementary Principal* (3) presents a chart indicating that in the ten-year period from 1947 to 1957 the percentage of pupils in high school increased 39 percent while the percentage of teachers increased only 33.4 percent. This means an increase in class size. Large classes have some points in their favor (1). For instance, there is some evidence that the better students show higher achievement in large classes than in small ones. On the other hand, there is a tendency for the percentage of failures to increase with class size. That seems to mean that if a student has good reading and study skills, the larger classes may be an advantage; but if he is a poor student, his chances of failure increase. In this situation, reading power can be crucial.

There may have been a time in the world's history when inability to read contributed to a person's happiness and adjustment to his fellow man, but today the non-reader is almost certain to be a misfit. The more educated the society, the more tragic is the poor reader's fate. And there is evidence in the 1960 census that the United States is increasing iits supply of educated people faster than it is increasing its population. Between 1950 and 1960 the population of the United States increased about one-sixth; the number of high school graduates increased about one-fifth; and the number of college graduates increased about one-fourth. This means that education is becoming more and more the common denominator of the people.

There is more need for education and for reading ability in jobs today than twenty years ago. As the pace of technology has quickened, educational requiremnts for jobs have risen. In the past 20 years the professions have expanded more than 150 percent and the semi-professions have grown even faster. While the total labor force increased only about one-third, managerial and official jobs grew about two-thirds; clerical jobs are up more than two-thirds. Skilled craftsmen's jobs which require long hours of apprenticeship or similar training, have also risen more than two-thirds. Some new jobs, such as that of programmer, have been born out of the technological movement. Meanwhile, the unskilled jobs have not kept pace, and in some instances, have actually decreased. The number of operatives has held pace with the increase in the labor force, but unskilled labor has increased only about one-third as fast as the labor force. Household workers have actually decreased about twenty percent and farm workers have decreased even more. Educated workers are in short supply and at a premium.

As the population bulge hits the labor market there is a possibility that even American genius for inventiveness may not be able to create jobs fast enough for the burgeoning supply of workers. If this becomes true, and there is some indication that it will, then the educated person who reads will have a

much greater power in the competition for jobs. Not only that, but as the pace of development accelerates, there will be a higher rate of obsolescence in jobs. Reading is a tool which permits the worker to roll with the times and adjust to these changes.

The amount of reading required in our schools is about four times as great as it was twenty or thirty years ago. Where one text was used, a long reference bibliography appears today. In place of an anthology in the English classes, there is a growing tendency to use the complete works (in paperback form) from which the excerpts were once taken. With the growing numbers of books and publications has come increasing need for selective, discriminative, and organized critical power in reading. Higher level skills are needed in reading today, especially to do large amounts of comparative and expository reading. Since the elementary schools have largely concentrated upon story-type reading, there is a growing and pressing need for the teaching of study-type reading in our secondary schools today.

The increase in the amount of reading is not just a proliferation of the same ideas. Knowledge has grown more in the last 50 years than it did in the previous 500. Without well-developed and efficient reading skills it would be impossible for a man to keep informed in his own field and maintain even a semblance of broad education.

For all these reasons the high school student needs better reading ability: to achieve in crowded and understaffed school situations, to gain admission and success in college, to qualify for satisfactory and sustained employment, to maintain communication with others, and to be selective under the barrage of hidden persuaders that surround him today.

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Chapter II

THE PREMISE AND THE PROPOSED PLAN

It is the purpose of this chapter to set forth the frame of reference upon which these studies rest. Proper research should always have a theoretical basis for existence, out of which the research materials, design, and methods of evaluating emerge. The first part of this chapter will be an exposé of the theoretical framework, and the second part will structure a plan of operational procedures and materials for testing the hypotheses which have suggested themselves during the process.

1. The Frame of Reference

Learning efficiency depends upon three factors: the individual, the nature of the task, and the conditions under which these operate.

Individual Differences. Since individuals differ in a wide variety of ways, the materials, the tasks, and the operational procedures must provide for the relevant differences if optimum individual learning is to take place. In skills learning some differences will effect the situation more than others and more attention will need to be given to them. For instance, differences in bodily height, weight and structure will probably be of very minor importance, but differences in degrees of mastery and learning rate will be of much greater concern. Differences in interests will be important, but not nearly so important as differences in skills deficiencies. There is a hierarchy, then, to the relevant importance of individual differences in specific learning situations. The extent to which additional learning will exaggerate these differences determines the amount of attention that will have to be given to them in selecting the task and the conditions of operation. Some of the characteristic ways in which people differ, arranged approximately in descending order as to the problems they present in the group teaching situation, are: intelligence, degree of reading proficiency, personality structure as it relates to dynamics and level of aspiration, working speed, progress rates, areas of weakness, and interests. A number of other more or less related problems could be added.

Probably the most important reason that better ways must be found to provide for individual differences is the wide spread of intelligence levels in the high school. Umstattd and Thornton compiled a table on I.Q.'s in the high schools (12, p. 1280) which represented scores drawn from more than 10,000 children at each grade level. A cursory view of this data indicates wide variation in intelligence among students in the high school, complicating the problems of instruction. In all grades there was a range from I.Q.'s of 50-59 to those of 140-149. Although the averages center close to 100 I.Q., the middle fifty percent have a spread in potential performance of four to five grade levels.

Not only is the spread in intelligence levels broad but the spread in reading achievement is even broader. Kottmeyer (6) reports the results when the Traxler Silent Reading Test was given to pupils graduating from the eighth grade in the St. Louis Schools in June, 1943. According to a table showing the results of these tests, the range of scores goes from below Grade 3 to above Grade 13. Only 29 percent of the students read at the grade level in which they were placed. In addition, no more than 17 percent of the group

read at any other level. This means that a teacher preparing a single lesson for a typical class of 36 would meet the grade level of difficulty of no more than 8 of her students. And this analysis gives attention to only one way in which these students differed; it does not take into account the many other needs which were different for each of these students. Another study made by the New York City Board of Education (9) carried similar implications.

The level of aspiration and the personality dynamics of the students may differ greatly, and probably have marked effect on success in learning; conversely, learning experiences may tend to heighten the differences appreciatively. This is an area that is difficult to investigate but which is conceded (7) to have an important effect upon learning. When what the learner thinks he can do differs greatly from what he actually does the subsequent learning is affected. This is tied to motivation and is basic and pervasive. Differences in personality structure and in levels of aspiration are difficult to measure or to isolate and, therefore, may be often ignored in the classroom, but they have a very potent power to disrupt or promote the learning process.

All teachers have had the frustrating experience of waiting, and waiting, for a few slow students to finish an assignment while the motivation of the faster students evaporated and turned into boredom. The chronically slow worker is embarrassingly aware of this problem, too, and wishes he could do something about it. Sometimes he simulates speed at the expense of accuracy; learns to bluff to cover the fact that he sacrificed learning in order to conform to the speed of others. Sometimes the teachers provide supplementary work for the faster workers, but these tasks, too, are finished at varying rates, and this only serves to multiply the problem. Whenever groups work together in a lock-step on a set unit of work, differences in working speed become a real problem.

Although authorities (5) seem to feel that children vary in their progress rates and that provision should be made for these individual differences, few studies seem to say that progress rates do not differ as much as authorities assume. Eisman (1) found the same equality of progress on word association, generalization, and retention when she compared superior, average, and retarded adolescents in a public junior high school. In another study (8) when 274 college students who were predicted to flunk out of college and 274 "average" college students were given appropriate training for the same period of time, comparable gains were made on reading tests. The students performed at very different levels, but the gains as measured by standard score points were almost exactly the same. This same phenomenon was observed on a number of other occasions during the years this reading program was in existence. When gains of the lower level students were compared with the typical students under similar situations they were never found to be statistically different. Furthermore, the types of errors made by the two groups of students in tests and workbooks did not differ significantly. The poorer students simply made more of the errors than did the good students; but the amount of material covered within the time limits of the test seemed to be more crucial than the number of errors in giving the poor students the significantly lower scores. Spreads in achievement usually become greater the higher the students go in school. This has been commonly observed. It would seem logical to explain this by attributing it to different progress rates; but the evidence is inclusive in this respect.

Differences in interests also pose problems for the learning situation. The

annals are full of accounts of children who suddenly began learning to read when the task was tied closely to their interests. This implies a wide range of materials on multiple levels. On the other hand, there is much to be said for the structuring of the situation to evoke new interests where none had existed before. The solution probably lies in a more varied approach to the problem.

In summary, a variety of individual differences may complicate the learning problem unless provision for them is made through materials and tasks and procedural patterns. There may be additional differences that need to be considered, but the ones already discussed would seem to be of prime importance in the learning of skills.

Nature of the Task. A number of projects are in process for the programming of materials for mastery of content. Science and mathematics and any well-structured subject would lend itself very well to the precision of the automatic teaching technique. It has been found that certain tasks in the nature of skills can be readily developed through this process. The nature of these tasks that lead to the development of competence in skills are: *identification, following procedures,* and *concept using* (4, p. 17).

Identification would be the kind of thinking that goes on when words are placed into categories, when meanings are derived from context clues, when elements on a map, chart or graph are interpreted to have meaning. Identification is also involved in recognizing common elements which have appeared in many known words as an aid to pronouncing a new strange word.

Following procedures would be typified by following directions, recording scores in a prescribed manner, learning new methods of study and following a set pattern to accomplish this

Concept using involves the solving of problems by means of the application of generalizations. It often involves elements of the other two tasks already discussed. For instance, recognition and identification of clues to organization of a paragraph may be brought about by following procedures suggested for skimming. This in turn might lead to the generalization that the total article may follow organizational patterns very like the ones already identified in a paragraph. By applying this generalization, recognition of the pattern of organization in a chapter may result. The inferential thinking required in integrating material gleaned from several sources to arrive at an implied idea would be another example of concept using. All of these tasks are suitable to automatic teaching procedures.

Conditions of Learning. It would seem that the important points of consideration are: readiness, motivation, associative factors, reinforcement, and transfer of the training.

Readiness involves a mind-set or intent to learn. If there is no task-set or attentiveness then there is no holding circuit to sustain the power of the mind in a narrowed focus. It would seem that an understanding of the object of the task and the relationship of the task to the goal is highly important. For this reason the material must look as if it would teach the skill. If possible, the material should have some kind of identification with student goals. Since choice helps the student to become involved personally with the learning, the material and the procedures must appear to give the student a choice. However, the choice should not be broad enough to disturb the task-set. Since

individuals' readiness varies and choices will of necessity create disruption in a unified program, the materials and tasks and procedures must be flexible and capable of completely individualized adaptation.

Motivation is a private affair which varies with the time and the experiences of the individual. However, certain factors that seem to promote motivation are known variables. Competition is stimulating; therefore the situation must offer the student a chance to compete, and this competition must be on a fair basis with some chance for failure and success. Competition with self is always fair and can be accomplished by means of achievement charts. Competition as a group seems to be of help to the average student, and for his satisfaction, group competition should be provided. While there are wide differences, the very poor and the very able both find competition with others more motivating; however, this competition must allow for the possibility of success. Success is more satisfying if it is shared; so provision must be made for others to know about the successes, but at the same time failures should be private affairs. Since man has an interest and attraction to gambling, the able should have a real opportunity for failure; the less able a real opportunity for success.

Because of the information that it gives about motivation and subsequent improvement in reading, an investigation into praise-reproof and its effect on reading success is summarized here. The study (10) was conducted by the New York City Division of Education in 1956. Student-teacher trainees kept record of all comments of blame-reproof nature made by 49 teachers they were observing. This record was correlated with improvement on reading tests achieved during this period by the pupils. No correlation was found to exist between the reading gains and any pattern of praise-reproof. However, pupils who were operating in a changed situation made significantly higher gains than students who had had no change. This indicates the importance of change and variety in its power to disturb the status quo and inducing the goal-seeking set within the student. In time with this finding, novelty and change should be an inherent part of any programmed learning situation.

Social factors also operate to affect learning. High school students especially need the opportunity to identify socially with other students they recognize as leaders in their social lives. Therefore the plan of operation should insure that prestige figures will be in the program and the opportunity will be provided for students to know they are working with them. For most students, too, personal recognition by the teacher is important, particularly so when the students relate their ideals with the teacher.

Finally, pressure is motivating. Time-pressure is easily achieved, but it must be of such a nature as to furnish optimum pressure with flexible limits to its power. This time-pressure must be adjusted to fit the needs of different students under different situations. Another kind of pressure is that caused by stimulating ideas. An attempt should be made to guarantee that all materials are packed with ideas that are important to the student and his life and development.

Associative Factors. Aristotle's three laws of association are still enduring and basic: similarity, contiguity, and contrast. Experimentation can determine the order to be followed in the scheduling, the sequence of the structure of learning, the best ways to distribute practice time, and when and how changes should be made. It is in this area that careful programming has the most to contribute. Except for scheduling for spaced practice, face validity will

used as a starting point in preparing the materials. Whether or not material and its arrangements looks reasonable, contains patterned elements that are similar or in contrast, will be the starting points only. Tryouts with children will have to change patterning of the materials and procedures in the light of results obtained.

Reinforcement is accepted as a necessary element in learning, although the explanation of how it operates differs with different theories of learning. In general, it is accepted that the student must have accurate knowledge of results immediately after each practice. The pleasant and the positive are considered to give more uniformly favorable results. When reinforcement does not occur with every single practice but is sometimes withheld on an intermittent basis, it seems that learning is strengthened. This method sustains attention and serves to heighten expectancy. It may be one means by which the student can be trained to carry the responsibility for sustained learning in real life situations.

Transfer to subsequent performance away from the initial controlled situation is a necessary element in learning. It presents many problems. Transfer seems to occur more readily when there is close similarity between the learning situation and the way that the learning eventually will be used. Also, there is more likelihood of transfer if responsibility for decisions in learning have been with the student. Intermittent reinforcement may help to prepare the student for the time rewards are not always there. Perhaps it helps to sustain motivation and make it more intrinsic and thus more apt to operate in the transfer situation. Transfer will probably come about more easily if there are occasional shifts to situations where the student must judge the outcome and where no answers are given until a later test period. It is understood that in this situation the material should be comparatively easy and the student should be approaching mastery. It is probably best, too, if the practice sometimes implies general principles to reinforce the possibility of inferential thinking.

Can a plan with work materials and procedures be devised to meet these conditions? Will it work?

2. The Plan

Provision for individual differences implies knowledge of the individual's needs. Therefore the first step in this program was to pick out a suitable battery of diagnostic tests, part of which had alternate forms which could be used at the conclusion of the program to measure growth.

Since any kind of grouping implies a homogeneity which practically never exists, it was decided that materials would have to be prepared on a multi-level sequential pattern. In theory, only one copy of a particular exercise would be needed because only one student should be working on it at any special time. Actually, in some instances, a number of copies were available. While the material would be sequential in levels, the individual work sheets would be interchangeable at any one level, permitting many practices for the student who learned slowly and cessation of practice at any point that the student demonstrated sustained competence. The many interchangeable units also permitted some latitude of choice of subject-matter to fit the interests of the student. Answer sheets to accompany the exercises would have to be readily available for immediate information of results of the trial by the student. There would have to be optional tests which could be taken at any

point to demonstrate competence for moving to the next level with alternate tests for a future use if the student failed to pass the test the first time.

There would have to be record sheets that were compact enough for ready reference and easy to maintain. This would provide knowledge of progress for both the student and the teacher. A wide range of materials to fit different skill weaknesses had to be available. This meant a multiplicity of charts. To simplify the record keeping and the practicability of comparison and review, it was decided that in so far as possible these charts would occupy a single sheet that could be placed inside the front cover of the student's folder for ready reference at all times. Both time and accuracy would be recorded unless a set time-limit was inherent in the nature of the material.

To provide for variable starting times, differences in working speeds, and also to give information as to how well the student was maintaining this working speed, the Mahal Pacer was used. This was a variable intermittent timer which could be plugged in at the start of each class session and used whenever the student wished to have knowledge of how his speed was developing along with his accuracy on any given material. If he did not wish to listen for the tone, which was usually set to ring every minute, he just ignored it. Whenever he was ready to begin a new unit of work he skimmed the unit while he waited less than a minute for the bell to ring. Then the bell served as a timer, warning him periodically of the passage of time and the place where he should be in the work. This tended to diminish the loss of time from dawdling, waiting for others to finish, and waiting to begin new work.

In theory, then, this procedure would provide for individual differences in intelligence, degree of reading proficiency, working speed, progress rates, areas of weakness in the skills, and, to some extent, interests. It would also permit adjustments to different personality patterns by utilizing the times when the student felt highly motivated but permitting him to relax when he needed to think about the integration of these skills or to use them in application to free reading or study in school texts. The program would be fairly permissive as to what was done within the time period, although once the student elected to come to the program, attendance would be expected.

The skills materials would need to be adequate to serve the students in all areas of skill weaknesses discovered through the diagnostic tests. Enough levels would need to be provided to meet the lowest achieving student's need and extend high enough to challenge the top student on the final day of practice time. For this reason, materials were prepared in a range from fifth grade level to college sophomore in difficulty. Materials for development of locational skills were found to be superfluous and were not used. On the other hand, the upper limits of many of the skills had to be extended as progress moved the students higher on the achievement scales.

Materials. In general the materials developed followed closely the three types of tasks that had been found to be adaptable to programming techniques and automatic teaching. In some instances materials involved different tasks as the material was developed at different levels. Only one kit of materials was available which could be used in its original form: the *SRA College Prep Laboratory*. All other materials had to be adapted to meet one or more of the criteria demanded to adjust to individual needs. The preparation and method of handling each type of material is described in the following pages.

Speeded reading was developed with marked *Reader's Digests.* Four issues were marked for paced reading at rates from 100 to 1,000 words per minute. Four or five articles were measured for marking and listed on a Paced Reading Guide chart under each word-per-minute group. Each word-per-minute group had one article with a test.

To mark a *Digest* article for a desired speed, each column was measured, on a scale of 2½ inches to 100 words, for the required number of words to the unit. For example, if the article was to be marked to be read at 200 words-per-minute, 5 inches were measured off and a red pencil line drawn to show the interval. This article was then listed as a suitably marked one for 200 word-per-minute drill on the Paced Reading Guide, copies of which were in the student's folder. To maintain the speed for which the article was marked, the reader must reach a mark every minute, at which interval the Mahal Pacer would ring to inform him that it was time to be at this spot. Whenever a student was consistently overtaking the markings at one speed, he would take and use the article with the test to check his comprehension. Eighty per-cent comprehension indicated that he was ready to try the next higher speed. At the end of the paced reading time, the student would record the speed at which he was reading and the last comprehension score.

Study Skills which these exercises attempted to develop were: 1) following directions, 2) selecting a title, 3) identifying main ideas, 4) getting details or facts, 5) making generalizations or drawing conclusions, 6) making associations and organizing ideas, and 7) thinking critically.

The graded materials used for cutting and mounting on oaktag were *Reading for Meaning,* and *Improving Reading Ability.* Exercises from *Standard Test Lessons in Reading* were broken into phrasings and typed on oaktag, one exercise to a card, ten exercises to a book. Blank outlines were prepared for exercises in *Study Type Reading Exercises* prepared to be used in organizing recall of ideas. The student would read an exercise, close the book, and attempt to fill in the blank outline from memory in organized coherent statements. *SRA Reading Laboratory — College Edition* was used without modifications of any kind. *Thimk?* was used by a limited number of students who wanted extra practice in critical thinking skills. All of these materials are listed in the bibliography which appears in the appendices.

Vocabulary skills were developed through three types of material. The synonym-antonym exercises were prepared on words drawn from *Reading for Meaning,* Grades 6-12. Ten words were used from each exercise. Where appropriate synonyms occurred in the material these were used as synonyms. All words that were chosen from other sources were checked for grade levels with the Lorge and Thorndike's 30,000 Word List (11). Antonyms and synonyms inappropriate for the grade were excluded. The key words were typed on yellow oaktag with triple spacing. The synonyms were written on small strips of orange oaktag; the antonyms, on blue. This pack was placed in an appropriately labeled envelope to correspond with the color level and exercise number with which it could be used. Instructions were entered at the front of each grade level for reference, and two forms of alternating tests on the whole level were placed with their score cards at the conclusion of the envelopes for that level. Accuracy scores were recorded and records kept. Whenever the student progressed far enough to warrant taking the first

trial test, an 80 percent accuracy score would move him to the next work level. The work with the synonym-antonym exercises was a process of matching words to the base list on the yellow card, sometimes done under time pressure with the Mahal Pacer as a gauge and the number of correct associations within the time limit as the score.

Multiple-Meaning Word-Association Drill was done with lists of words from the "AA" and "A" lists in the *Teachers Word Book of 30,000 Words* (11). A student picked up a card with three categories listed on it. From the list of "AA" words he could see how many would fit into any of these categories. Frequently a word would fit under all three categories because of the multiple meanings. An example would be:

CATEGORIES

Baseball	*Politics*	*Business*
run (home run)	run (for governor)	run (on the market)
base (position on a diamond base)	base (central place of operation)	base (level)
strike (attempted hit)	canned (talk)	strike (at a mill)
canned (benched)	dead (inactive politically)	canned (fired)
dead (stopped ball)	hit (popular appeal)	dead (defunct)
hit (connect with ball)		hit (meet with failure or success)

Association with multiple meaning words was sometimes used under time pressure with the Mahal Pacer. The number of associations made in a given time which could be justified were recorded. Progress in rapid association was indicated when the number of words lengthened on successive category cards. The "AA" list proved to be the most suitable for work within the time limits. Students who tried this work liked it for its novelty and challenge. The materials were suitable for a wide range of ability levels because more able students saw more implications in the words and less able students found the words meaningful in some known connotations. These exercises may teach critical thinking skills; they may merely encourage rapid flow of ideas. This part of the materials was added as a trial to check interest and attraction for the students. Further research is indicated.

Vocabulary meaning through context clues was prepared by listing words and pages on which the words occurred. The students skimmed to locate the word, read the paragraph containing it, and wrote down an estimation of its meaning. Later the exercise in the Educational Section of the *Digest* was used as a check on accuracy. These exercises were arranged on three levels of difficulty and were designed to furnish six different skills practice: 1) following directions, 2) skimming to find specific words, 3) reading for meaning, 4) writing the word with its meaning, 5) defending opinion by working in pairs, 6) checking the meaning in further practice. There was little interest shown in this material, perhaps because of its difficulty.

Maps, Graphs, and Charts Exercises were prepared by mounting an illustration on oaktag and adding appropriate questions and directions. Sixty such work cards were prepared in graduated colors. The materials were arranged in what appeared to be the proper order of difficulty because no criteria to suggest the proper order were available. Road maps, timetables, almanacs, and atlases were used as well as illustrations drawn from current periodicals. Materials were selected for timeliness, appeal to the students, and range of

problems presented by the materials. Answer keys were prepared to accompany the exercises. The material proved to be highly attractive and met a need not supplied by commercially prepared materials.

Administrative Procedure. The students were registered for the program on a voluntary basis. There were to be no excused absences from the regular sessions after the first week of the program. Make-up work, detention, driver-education, and other academic activities were to be taken care of on afternoons other than those on which the reading class met. All extra-curricular activities were to be scheduled for after three o'clock.

Theoretically, communication between the student and the instructor was to be transmitted largely through the student's folder. A manila folder was prepared for each student. The student's name was typed on a gummed label and pasted to the folder tab. The progress chart with space for various types of graphic representation of the scores for each set of materials was taped inside the front cover of the student's folder. A series of duplicated sheets was stapled to the inside of the back cover. These included the directions for using, scoring, and recording the scores for each set of materials, a percent correct table, and a guide to the marked articles and comprehension quizzes in the *Reader's Digest.*

The folders were arranged alphabetically in four file boxes labeled "A-D," "E-L," "M-R," and "S-Z." Upon entering the cafeteria each afternoon the student would pick up his folder and look at his progress chart. A red check mark indicated the area in which he could work and the level of difficulty at which he should begin.

The student would decide the relative amount of time he would spend on each skill, and the order in which he would proceed. A single vertical red line at the end of any row of scores in the progress chart would indicate to the student that he was ready to take a test. A subsequent satisfactory score on the test promoted him to the next higher level. An unsatisfactory test score indicated that the student needed further work on his present level. Two vertical red lines at the end of any row of scores indicated that the student's work was satisfactory and that he should proceed to the next higher level.

All papers were to be left in the folder for at least a week. This would enable the instructor to check on the cause of lowscores and the areas in which the student was experiencing the most difficulty.

One of the most essential features of this type of instruction is a practical method of singling out those students needing special help. When a significantly large group of students showed a particular weakness as revealed by their recorded scores on their papers, they were put "On the Spot." A large hexagon cut from red construction paper, was inserted in the folder. It would mean that the student was to meet with the group and the instructor behind the screen in the faculty section of the cafeteria. "The Spot" was also to be used to assemble homogeneous groups for the introduction of new material.

Space for storing the materials was arranged in a supply room located just outside the cafeteria. An extra cafeteria table was fitted with rollers so that the microphone, amplifier, and all reading materials, once they were arranged on the table, need not be moved. At the beginning of each session the table was to be rolled from the supply room to the center aisle of the cafeteria, and returned at the end of the session. The material could not be left in the

cafeteria for obvious reasons, nor could it be taken into the cafeteria until two o'clock because the room was being used for the study hall until that time.

This was essentially the theory and the plan evolved from the theoretical basis. Would it work? Chapter III presents the findings when this plan was used in a mass situation with 114 high school students (2). Chapter four compares the plans operation with the usual classroom uniform instruction.

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Chapter III

MASS DIFFERENTIATED SKILLS INSTRUCTION IN HIGH SCHOOL

1. Statement of the Problem.

Purpose. The purpose of this study was to determine if reading skills can be taught to a large number of high school students in a single group and still provide for individual differences in (1) intelligence, (2) levels of reading ability, (3) speed of reading, (4) progress rates, and (5) areas of weakness.

One hundred fourteen high school students in a single group worked with materials to develop the following specific skills: (1) vocabulary development; (2) speed of reading; (3) study skills involving reading for organization, following directions, and critical thinking; and (4) understanding graphic representations as found in maps, charts, and graphs.

Procedure. An inexperienced teacher, one who had never taught before, was chosen to handle the class so that the burden of the success of the experiment would not be directly attributable to the trained skill of the teacher. It was felt that this was a way to try the experiment under more rigorous conditions. Following pretesting the students were assigned to different materials on the basis of their test scores by checking work levels on the charts in their individual folders. A color code was set up for the different difficulty levels of the exercises. The color for each level was fairly consistent for the different types of materials. Too great concern on the part of the students for their exact achievement levels was eliminated by having colors to designate levels. The bright colors also served as an attractive motivating device. After the initial assignment the students were to be left free to work at their own progress rates and, within limits, to choose among materials.

The program ran for seven weeks, meeting for an hour after school three times a week: Tuesdays, Wednesdays, and Thursdays. At the conclusion of the program, alternate forms of three tests given at the beginning were administered to the group. Critical ratios were derived from the before and after test scores to test statistical significance of gains made.

Population. Lynnfield High School in Lynnfield, Massachusetts, was chosen for the study for the following reasons: It was close to the Boston area so that there were no transportation or communication difficulties for personnel conducting the experiment. Since the time from 2:00 to 3:00 p.m. was often used for extra-curricular academic activities, the offer of special reading help during this hour was acceptable to the students. The community rated high in socio-economic background and many students planned on attending college. This was an additional guarantee of student support for the planned program. The administration and teachers at Lynnfield had expressed interest and willingness to cooperate in this type of study. Without their cooperation in every way, the project would have been headed toward failure from the start.

To see whether students in the program made any gains in excess of the

gains made by comparable students at the school, a small control group was selected. Although the control group was compared with the experimental group on eight variables and it was statistically determined that there was no statistical difference between the groups at or below the thirty-seventh percent level, the control group proved to be atypical in the most important variable of all: motivation. Most of the students in the control group were negative toward the entire program, had elected not to take the reading course, and refused to come in for post-testing after the experimental study was completed. Compliance could have been secured under coercion, but it was felt that the results would not be valid, and this part of the comparison was abandoned.

Table I provides full statistical data concerning the experimental group prior to the experiment. Some characteristics of the group were as follows: Sixty men and 54 women took part in the program, making a total of 114 participants. Of this total 70 were eleventh graders and 44 twelfth graders. As of January 28, 1960, the average age was 16 years and 8 months. As measured primarily by the Otis Gamma Intelligence Test (15), the average

TABLE 1. CHARACTERISTICS AND TEST SCORES OF THE EXPERIMENTAL GROUP BEFORE THE EXPERIMENT.

Characteristic	*Number*	*Mean*	*Standard Deviation*	*Sigma of the Mean*	*11th Grade Percentiles*
Age:	114	200.7	7.05	.663	
I.Q. Otis Gamma Test:	114	114.17	9.6	.904	84
ITED Tests					
5. Interpretation — Social Studies	113	19.13	4.87	.459	74
6. Interpretation — Natural Sciences	113	18.7	5.38	.508	
7. Interpretation — Literature	111	18.3	5.2	.491	
8. General Vocabulary	112	20.7	4.11	.390	
9. Uses of Information	112	21.0	4.9	.461	
Spitzer Study Skills Test					
Test 3, Maps, Charts and Graphs	107	28.0	4.2	.404	60
Test 5, Outlining	107	29.2	8.46	.821	62
Watson-Glazer Critical Thinking Test	58	61.9	7.06	.934	77

Sex	*Men*		*Women*	
	Number	*Per cent*	*Number*	*Per cent*
	60	52.6	54	47.4
Chi-Square .017		Not statistically different.		

I.Q. was 114. The percentile levels reached by the Lynnfield students in this study on all the tests used indicated distinct superiority over most high school students with relationship to I.Q. educational achievement, study skills, and ability to think critically. On the *Iowa Tests of Educational Development* (3) percentiles were based on middle of the year eleventh-grade national norms. Average percentiles of these five tests placed these students at the 74th percentile, just below the top quarter of the high school population on which the test was standardized. The percentiles for the *Spitzer Study Skills Test* (6) are based on end of the year eleventh grade national norms. The results were: Test 3, Understanding Graphs, Tables and Maps, 60th percentile; Test 3, Organization of facts in Note Taking, 62nd percentile. On the *Watson-Glazer Critical Thinking Appraisal* (7), the percentile was based on national high school norms. The Lynnfield students scored at the 77th percentile which is almost at the median for the "Freshman College Applicants" described in the test manual.

Materials. A public address system and the Mahal Pacer were used as a means of controlling and motivating the students. The public address system was set up to be used for announcements at the beginning of the period and whenever a special announcement needed to be given to the whole group.

The Mahal Pacer (4) is an intermittent timing device which can be set at variable time intervals. It helps the students to work independently because it constantly refocusses attention to the task. Because it is a permissive and impersonal reminder, it is not threatening to the more sensitive students. It serves to cut down loss of time by getting the students started and by permitting variable starting times. This pacer was in operation all the time so that the students could check their speed on any materials they were using. It was usually set to go off at one-minute intervals, although occasionally the three-minute interval was used. According to expectations, it was found to be particularly useful with speeded word recognition, the *SRA Reading Laboratory* and the *Reader's Digest.* Further description of this device, suggestions and research concerning it, are found in Chapter V.

Because the types of material and the way they were prepared are described in Chapter II, no further description is needed here. The list of materials used to develop the skills were:

I. Speed of Reading

Reader's Digest, Reader's Digest Association, Pleasantville, New York. Four issues were used, fifty to sixty copies of each issue.

Chronicles of America Series.

II. Organization and Study Skills

Guiler, W. S., and J. H. Coleman, *Reading for Meaning,* Revised. Chicago: J. B. Lippincott, 1955. Twenty-four exercises were used from each of eight workbooks which ranged from grade 5 to grade 12.

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III. Vocabulary

Guiler, W. S., and J. H. Coleman, *Reading for Meaning.* Revised. Chicago: J. B. Lippincott, 1955. Words drawn from Books 6-12 were used for the development of synonym-antonym exercises.
Reader's Digest, Educational Edition. Reader's Digest Association, Pleasantville, New York. Four issues were used for meaning from context exercises.

IV. Maps, Charts, and Graphs

Exercises were constructed using materials drawn from periodicals and magazines as described in Chapter II.

2. Findings.

The theoretical frame of reference, hypotheses emerging from this frame of reference, and a tentative plan with materials to test the hypotheses were presented in Chapter II. How did this plan work out in actual operation?

Operation and Adaptations. At the first meeting, in so far as possible, each student was given his folder with his test scores translated into needs and levels at which he could begin to improve in each kind of skill.

An informal phrasing test was administered and each student determined his reading speed using an article from the *Reader's Digest* (1). After completing a comprehension check of six questions, the students were instructed to enter their speed and comprehension scores in the appropriate spot on their *Reader's Digest Charts.* If work on phrasing appeared desirable, initial levels for this work were also checked on the phrasing charts by the students.

The correct use of the Paced Reading Guide to be used with the *Digests* was explained. There followed a demonstration of the Mahal Pacer, how to use each set of materials, and a thorough explanation of the operational procedure which the class would follow throughout the program. A large model of the progress chart was affixed to the wall and each step described in the instructional sheet in the student's folder, "How to Keep Your Records," was demonstrated.

Certain problems were immediately apparent. The cafeteria, which was the only room in the school large enough for such a program, was not very suitable. The acoustics were poor. The ventilating system necessary for a room in which food is prepared and consumed was very powerful and very noisy. The microphone and loudspeaker, although in good working condition, periodically gave out with strange and unwelcome sounds. There were other

interruptions, such as the staff of the kitchen putting utensils away and the Coca Cola representative filling the Coke machine. It was difficult for a student to rise, sit or move in any way without making a scraping noise on the floor. Lighting facilities were not ideal for reading. Because of the construction of the room, particularly the presence of six large pillars toward the center of the room, there was no satisfactory location from which to address the students. The demonstration could not be seen by all of the students at the same time.

The total effect was that very few students had been able to hear and see all that went on during the introductory session and were not prepared to follow the original plan of self-directed activity without further help. It was decided that two weeks be spent in specific teacher-directed activity, during which time each student would actually work on at least three kinds of material that he needed, as indicated by his test scores, for a minimum of two hours. The class was divided into small groups of thirty or forty students. The size of the group was sometimes determined by the limited number of exercises of a particular type. At the beginning of the session the students were told which group they were in and what material they were to work with. The instructor moved from one group to the next, first explaining what the material was designed to do for them, then helping them get started. After starting the groups, the instructor returned to the first group to answer questions. Thus the transition from the familiar technique of working in unison in the classroom to independent self-direction was gradual.

A record of attendance was kept for each student on his individual folder in the following manner: any folders remaining in the file boxes a half hour after the session began were stamped "ABSENT" with the date. This manner of keeping the attendance record where the student was constantly aware of it, rather than in a teacher's record book, proved very successful. It was a reminder that the student would have to work harder to make up for lost time. It made clear to the student that his absence had not been overlooked.

During the first two weeks the final preparations were made so that the original plan could be followed beginning the third week. The level of difficulty at which a student began the comprehension material was assigned according to his score in the test battery. To avoid confusion during the initial period of self-directed work, the number of exercises available for any given level was considered in determining the range of test scores assigned to that level. For instance, students in the range of fifty to sixty-four on the Iowa Tests of Educational Development were assigned to the *Reading for Meaning* — Yellow. There were twenty exercises at this level for the eighteen students whose scores fell within this range. Had the range been fifty to sixty-five, twenty-five students would have been trying to work at this level and there would not have been enough exercises to go around. It was felt that this practical, though seemingly arbitrary, method of assigning starting points would have no detrimental effect on the student's progress because the program provided for promotion to the next higher level as soon as the student's performance indicated that he was ready.

The group of students with whom this program was inaugurated proved to be atypical with respect to their academic achievement. Although the range of abilities was wide, the achievement curve was skewed toward high achievement. Many of the students had been drawn from the accelerated college preparatory class. Some had exceeded the 99th percentile of the Iowa Tests

of Educational Development. The Mahal Pacer enabled these students to concentrate on speed with one hundred per cent accuracy on relatively easy material, but this technique had to be balanced with materials that the student would find challenging if real growth was to occur. Consequently, materials of a more challenging nature were added to the plan of the original program.

These advanced materials which were added to those in the original plan, and therefore not included in the progress chart and direction sheet, were accompanied by a page of directions explaining how to use them, and, whenever possible, a graph or chart for recording the student's score was included on the same page as the directions. The most convenient method indicating to the student that he was to work on these materials was to write it on the front cover of the student's folder. It was explained to the student that if he found the name of a new set of materials on his folder, he could go to the table identified by the appropriate sign, take a duplicated copy of the directions from the manila folder and one of the exercises, and proceed according to the directions.

A system of setting up the cafeteria evolved which added much to the smooth operation of the program. Large oak-tag signs were affixed to the wall of the cafeteria and to the square pillars toward the center of the room. Each sign bore the name of the set of materials which was placed in that section of the room at the beginning of each session. At first, certain students were asked to place the material in the correct positions. However, it was soon arranged that the first students who entered the cafeteria took the material on which they wished to work to the appropriate spot in the room. The sign, which was left in place for the duration of the program, also served to publicize the program. These work stations eliminated confusion in locating materials, and made it easier for the instructor to supervise the activity by grouping the students as to the type of skill on which they were working.

During the course of the program certain adjustments were made to facilitate handling of the material. To avoid confusion and waste of time, the answer keys for the *Reading for Meaning* exercises were stapled to the lower right front corner of each exercise sheet. Directions for using the material had to be made more precise than was originally thought necessary. Copies of the revised directions were made and distributed to each student for referral at any time.

Beginning with the third week of the program, the students worked independently to improve their reading skills. They were told the time intervals at which the Mahal Pacer would ring so that they could time all their work. The decision as to the amount of time to be spent on any area and the order in which they were done was left to the student.

The truth of the theory that students consider their time valuable and will use it wisely was apparent in this situation. There was no discipline problem. Students did not wait while someone else finished an exercise or paper was being passed out. The progress chart enabled the student to see his progress and his weaknesses. He did not have to take the teacher's word for it, and he became personally involved in improving his record. He was neither pushed nor held back by the instructor or other students, and was competing only with his own record of time limits and scores.

Students worked willingly, finding the material challenging though not defeating. No student was ever faced with material that was too difficult for him. Many students remained after three o'clock to finish their work. Others

requested permission to take materials home with them. The atmosphere brought about by this type of program proved to be very conducive to progress and hard work. Teachers who visited the room for observation commented with surprise upon the zeal with which many of the students were working.

Findings with Respect to Specific Skills. Not all students used all the materials available. Table 2 indicates the number and per cent of students who used each type of material. In addition to the factor of need, as revealed by the test scores, such factors as novelty and structural appeal seemed to influence the student's choice of material. For instance, the Synonym-Antonym Word Association exercises (See Chapter Chapter II) were colorful and manipulative. The students never had worked with exercises of this type, whereas the vocabulary from context, *Reader's Digest* exercises, were very similar to the type of vocabulary work the students had done in their regular classes.

The fact that the exercises in the Maps, Charts, and Graphs material were taken from current periodicals contributed much to the popularity of these exercises. Recent statistics concerning American and foreign automobiles proved to be a very potent subject with high school students.

Development of speed in reading was one of the objectives of this program. In reviewing the findings, it must be remembered that flexibility of reading rate was considered to be a very important part of this development. A mechanical timer was used to inform the students each minute of where they should be in their reading, but no mechanical controls forced the student to consideration of any particular part of the material at any time. In other words, flexibility of reading rate was left to the judgment of the pupil. Table III presents comparative data on the before and after reading rates of the group of students who worked with the *Reader's Digest* Marked-Book materials. In a breakdown into four groups according to starting rates of speed, it was found that the two slower groups made significantly more gains than did the two faster groups. The students reading between 200 and 299 words per minute at the beginning of the experiment made the most gains of

TABLE 2. NUMBER OF STUDENTS USING EACH TYPE OF MATERIAL AVAILABLE.

Material	*Number*	*Per cent*
Number of students in the experiment	114	100
Maps, Charts, and Graphs	102	89.5
Reader's Digest Marked-Book Speed Reading	99	86.0
Phrase Reading Exercises	87	76.3
Reading for Meaning Exercises	86	75.4
Following Directions	50	43.9
SRA College Prep Laboratory	44	38.6
Synonym-Antonym Word Association	43	37.7
Word Association on Multiple Meaning Words	42	36.8
Critical Thinking: *Thimk?*	17	14.9
Organization Exercises on Strang *Study Type Reading Exercises*	17	14.9
Vocabulary from Context — *Reader's Digest*	6	5.3

TABLE 3. COMPARATIVE DATA ON THE BEFORE AND AFTER READING RATES.

	Number		*Standard Deviation*	*SEM*	*SED*	*Diff.*	*CR*
Start	70	226.90	61.2	7.34	12.94	103.20	7.97
Finish	70	330.10	89.2	10.66			

any of the four groups. Comprehension remained about the same for the faster initial readers but was improved about 10 per cent for the two slower groups. However, the before and after comprehension scores were not significantly different when gains of the total group were considered.

Achievement in the other skills areas was measured on standardized tests. Whenever test scores are examined, two questions always arise: How well are these students performing with respect to the over-all group their age in the country? And are they performing as well as could be expected in line with their scores on intelligence tests?

On all the initial tests administered to these students, performance was above the national average. The lowest scores were made on the Spitzer Study Skills Tests in Outlining and in Reading Maps, Charts, and Graphs. But even on these tests the mean achievement was slightly above the average on the national norms.

On the other hand, it is probable that these students were not performing as well as they should be. The *Otis Gamma Test* had been used to measure intelligence potential. The *Otis* tests score relatively lower than most other instruments for appraisal of intelligence. The *Manual of Directions* for the *Gamma Test* states, "Gamma I.Q.'s tend to be somewhat less variable than ordinary I.Q.'s" (5). The Eells study (2) found the Otis Tests consistently measured lower than did other tests of intelligence when used on 2,295 pupils. According to this relatively conservative instrument, the *Otis Gamma Test,* these students scored at the 84th percentile. This means that their average achievement should be near the 84th percentile to be consistent with their intellectual ability. On the *Interpretation of Social Studies Test* they were about fifteen percentile points below this level; on the *Watson-Glazer Critical Thinking Test,* seven percentiles below. This means that the students were able to score on tests requiring thinking fairly near their intellectual level but were below expectancy in interpreting ideas read and markedly poorer in organization skills.

Standardized Test Results of the before and after tests are found in Table 4. To permit very rough intercomparisons between the tests, the percentiles on national norms are given. However, it must be borne in mind that these tests were standardized on different populations and the comparisons may not be at all appropriate. Before and after test results are restricted to only those students who took both forms of the same test, with no guarantee that the students tested all worked on specific types of material that might have been expected to improve that particular skill. Indeed, it is quite unlikely that all of the students worked on any exercise in common. Because of time limits only three of the original battery of tests were administered at the conclusion of the experiment.

TABLE 4. COMPARISON OF TEST SCORES BEFORE AND AFTER THE EXPERIMENT.

Test	*Number*	*Mean*	*S.D.*	σ_m	*Percentiles 11th Grade Nat'l Norms*	*C.R.*	*Significance*
ITED Test 5, Interpretation — Social Studies:							
Pretest	65	19.6	4.604	.575			Highly
Post-test	65	21.8	4.381	.542		2.74	significant
ITED Test 8, General Vocabulary:							
Pretest	63	21.4	4.847	.603			Highly
Post-test	63	24.2	4.180	.536		3.49	significant
Spitzer, Test 3, Maps, Charts and Graphs:							
Pretest	63	28.06	4.067	.516			Highly
Post-test	63	31.4	4.219	.537		4.57	significant
Otis Gamma I.Q. 85					65	115.1	9.4 .804

With all of these cautions in mind, it is still safe to say that the students' test scores after the experiment were significantly better (at or above the one percent level) on all instruments used. It can also be assumed that the students were performing nearer their intellectual potential at the conclusion of the experiment than they were at the beginning.

3. CONCLUSIONS.

This study seems to indicate that large groups of students can be taught many and varied skills in reading with provision for individual differences in intelligence, levels of reading ability, speed of reading, progress rates, and areas of weakness. All three tests which were administered before and after the experiment showed statistically significant gains beyond the one per cent level of confidence.

A trained, but inexperienced, teacher conducted the program after the materials were prepared and the plan of operation developed. Essentially, the program was self-directive on the part of the students. Students worked willingly and with self-discipline under less than optimum conditions.

It cannot be assumed from this study that all types of students could work under this program efficiently. Here research is needed with different groups. It cannot be determined from this study whether the materials, the methods, or the distinctiveness of the program provided for the learning.

Materials that are on the market at the present time need to be augmented and adapted to meet this kind of a program. Much more variety and more careful structuring is highly desirable in self-directive materials of this type.

This study seems to indicate that if suitable materials are available in an organized pattern, at least some high school students can assume considerable responsibility for their own learning with very favorable gains in independence and study skills. More research using students of different levels of ability, developing different reading skills in large group situations, is needed.

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Chapter IV

READING SKILLS: SELF-DIRECTED INDIVIDUALIZED vs. UNIFORM CLASS INSTRUCTION

I. Statement of the Problem

In Chapter III a research study on mass differentiated skills instruction in reading in high school was reported. Since virtually all the students in the eleventh and twelfth grades who were interested in the program participated, no similarly motivated group was available for a comparison. In other words, although the program resulted in improved performance on all the tests used, there was nothing to indicate conclusively that these students improved more than they would have done without the program.

How would this self-directed individualized approach, used in the Lynnfield study, compare with persent practices of uniform classroom instruction? To answer this question an experimental project was set up at Boston University in the summer of 1960 as part of the teacher training program at the summer school.

II. Procedure

Since present practices do not include skills instruction of very large groups, it was decided to confine the study to two comparable classes of approximately twenty-five students each. By so doing, a large classroom would permit twenty-five or so teachers, as students at the summer school, to observe and participate in the program. Two very large adjoining rooms were available and a suitable room for storage of the multiple materials was located directly across the hall.

If the self-directed individualized approach was to have a real test, it would be important to have a highly competent teacher in charge of the comparable group of students. Consequently, Miss Huberta Randolph, Coordinator of the Language Arts Program for the Secondary Schools of Salt Lake City, Utah, an experienced and especially able classroom teacher, was invited to teach the demonstration class. The students who saw her teach this class were greatly impressed with her charm and warmth of personality as well as with her very real ability as a teacher.

A great variety of materials such as books, workbooks, machine equipment and supplies, were ordered, including those that Miss Randolph had especially requested. Book racks of paperbacks of a wide variety were available for free reading. Scholastic Services sent a set of the "Coverage" books from their new Literature Units. The Reader's Digest sent up-to-date copies of four issues of their Educational Edition of the magazine. A *Controlled Reader* and *Tach-X,* an *Elapsed Time Indicator,* a couple of *Rateometers,* and *SRA Reading Accelerator,* and a wide variety of other equipment were added to the materials which had been used in the Lynnfield study. The books and materials to both groups were rotated so both groups were exposed to at least half of the same materials. For example, the "Courage" anthologies and the *Reader's Digests* could be used equally well in both situations. Other materials could be used to advantage only with one or the other of the groups: the *Elapsed Time Indicator* could be used only to advantage with the uniform classroom instruction; the Maps, Charts, and Graphs materials, with only one copy of each exercise available, could be used only with the self-directed individualized approach.

In order to see what teachers would do with very good materials if copies were insufficient for every child to have one, a number of the materials were ordered in short supply of only fifteen copies each. No one was told that this was the intention, because, of course, that would have presented a special challenge. There were plenty of copies of many of the materials; so no one would be left without something with which to work if the limited supplies would not fit the plans. For instance, there were fifteen copies each of the four recent editions of the *Reader's Digest,* but there were more than one-hundred copies of four out-of-date issues of the *Reader's Digest* also on hand.

Students for the two classes were drawn from a wide variety of schools in and near Boston; thirty-two schools were represented. All students for some reason or other felt a need for improving their reading skills. In a few cases, the need was initially more clearly felt by the parent rather than the child, but no student was accepted unless he personally expressed a desire to attend the classes. Students with severe word recognition difficulties and in need of individualized attention were sent to the reading clinic, but a number of those who attended the classes needed help with phonics and word structure, too. Practically everyone needed vocabulary development of one kind or another.

In order to dramatize individual differences for the teachers, the students were accepted from seventh grade to college freshman level, inclusive. The great variety of size and bodily development made differences much more apparent than were the disparities that were less obvious but more crucial to learning. Most of these students were pretested in May prior to the summer classes. To measure intellectual performance the WAIS and WISC Wechsler Scales were administered. When time did not permit the administration of the entire battery of these tests, the short form of the Comprehension, Arithmetic, and Similarities was used. All students were tested on the *Morrison-McCall Spelling Scale,* the *Boston University Word Pronunciation Test,* an informal visual memory test, the *Michigan Speed of Reading Test,* and either the *Iowa Silent Reading Test,* Advanced, or the appropriate *California Reading Test.* A number of students were tested on organization skills through aided and unaided oral and written recall of material they had read. Although this material was frequently taken from the *Niles Battery,* the *Durrell Diagnostic Reading Test* and the *Grey Oral Reading Paragraphs* were also used. In other words, fairly comprehensive information was available on the reading and study skills of these students.

The students met in two-hour sessions, four days a week, Tuesdays through Fridays, for six weeks. Three of the eighteen sessions were used for the pre-orientation, the post testing, and the party that culminated the program. There were about thirty hours of training in contrast to the eighteen hours in the Lynnfield study reported in the previous chapter. However, these students were much more in need of help than were the students at Lynnfield.

The twenty-four teachers who registered for the class met on Mondays for discussion and review of their notes and observations. The teachers were paired so that one of each pair could be with each of the classes; in that way information and comments could be shared. At the end of each week, the teachers changed places to observe and work with the opposite group of children. Each teacher had a turn checking folders and preparing materials for the self-directed group who were working independently, and also taught the demonstration class for a thirty minute period. Lessons taught were coordinated to provide the skills the children needed. Miss Randolph had complete charge of

the demonstration class the first two and a half weeks, and for approximately forty-five minutes of every day the class met. The teachers vied with each other in preparation of the demonstration lessons and a very wide variety of materials and techniques were shared during the teaching of this class.

On the first day the class met, Miss Randolph oriented the children while the teachers were made acquainted with the outline of the experimental design and the part they would play in its operation. That night the two groups were equated and the division of the groups was made at the second session. The two groups were told that they would be working in somewhat different ways, that the post-testing would be done just before the end of the six weeks, and the class who improved the most would be given a party by the losers.

Table IV contains the comparative data on the characteristics and pretests

TABLE 5. DATA ON THE COMPARISON BETWEEN TWO GROUPS: UNIFORM (GROUP I) VS. INDIVIDUALIZED (GROUP II) INSTRUCTION

Variable	*Group*	*Number*	*Mean*	*S.D.*	*Sigma of the Mean*	*C.R.*	*Level of Significance*
Wechsler (WISC or WAIS) I.Q.							
	Group I	22	114.71	7.14	1.024	.753	Not sig.
	Group II	21	113.14	7.98	1.816		
Age in Months							
	Group I	22	184.7	11.23	.421	.811	Not sig.
	Group II	21	179.3	11.01	.516		
Iowa Silent Reading Test, Advanced							
	Group I	19	162.5	6.534	1.886	—1.095	Not sig.
	Group II	18	165.8	8.589	2.295		
Michigan Speed of Reading Test							
	Group I	22	37.2	7.524	1.881	.788	Not sig.
	Group II	21	34.7	10.608	2.573		
Morrison-McCall Spelling Scale							
	Group I	22	41.03	5.296	1.324	—.585	Not sig.
	Group II	21	42.28	6.900	1.674		
Visual Memory Test							
	Group I	22	9.8	2.28	.772	.800	Not sig.
	Group II	21	8.7	2.56	1.18		
Durrell Phonetic Spelling Test							
	Group I	22	11.4	2.87	.806	—1.233	Not sig.
	Group II	21	11.9	2.90	.934		

						Chi-Square	
Grade Placement:							
	On two groups by 7 grades					1.741	Not sig.
Sex							
		Boys		*Girls*		.572	Not sig.
		Number	*Percent*	*Number*	*Percent*		
	Group I	13	59.1	9	40.9		
	Group II	12	57.1	9	42.9		

of the two groups. Two students in each group were seventh graders and too young to be given the *Iowa Silent Reading Test;* these four students were given the *California Reading Test;* Intermediate. One student in each group, a ninth and a tenth grade student, were given the *California Reading Test,* Advanced. They were low achievers and the *Iowa Silent Reading Test* would not have been appropriate as a diagnostic instrument. Inspection seemed to indicate that these students were appropriately assigned to the two groups to create a balance, but no treatment of the six scores was attempted. These six students were not included in the analysis of the before and after test results, but their improvement on the California Tests was approximately equal to that of the total group.

The two groups were closely matched. Group I, who was assigned to the uniform class instruction, was slightly favored on four of the variables; Group II, who was given the individualized self-directive program, was slightly favored on three of the tests. Differences between the two groups were slight and not statistically significant when the groups were compared on nine variables; namely, age, sex ratio, grade placement, I.Q., Iowa Silent Reading Test scores, Michigan Speed of Reading scores, Morrison-McCall Spelling achievement, Durrell Phonetic Spelling Test, and a visual memory test.

III. Findings.

Post-tests were given to the two groups after thirty hours of work. Comparison of before and after test scores and the gains are presented in Tables V and VI. From the critical ratios in Table V it is apparent that both groups made highly significant gains on both the reading tests but no gains on the spelling test. It is also clear that the gains made were not significantly different for the two groups. The average improvement on the two tests was approximately 2.8 grade levels, with the advantage slightly in favor of the uniform class instruction on the Iowa Silent Reading Test and slightly in favor of the individualized self-direction on the Michigan Speed of Reading Test.

Observation of the classes indicated that such factors as group rapport, cooperation and numbers of books read seemed to be higher in the class with uniform class instruction. On the other hand, the students who worked on their own appeared to develop in ability to direct their own work and in general maturity. The younger students of the group seemed to take more readily to the self-direction than did the older students.

Students in this group occasionally expressed frustration at not having a teacher, but admitted that they seemed to be making satisfactory progress without one. None of these factors were measured objectively. Actual check of books taken from the paperback display did not favor one group over another in extent of reading, but there may have been additional selection of books from other sources. No valid conclusions can be drawn from these observations; they merely indicate areas which need more investigation.

Both groups made similar gains on reading tests. This would indicate that a self-directive individualized program for development of reading skills is possible and valid. The best reading developmental program probably lies in a combination of these two methods with skills being developed on the individualized basis and appreciation, integration, and transfer of skills in the unified classroom.

TABLE 6. COMPARISON OF BEFORE AND AFTER TEST SCORES ON UNIFORM VS. INDIVIDUALIZED INSTRUCTION

Test *Group*	*Test Time*	*Number*	*Mean*	*S.D.*	*Sigma of the Mean*	*C.R.*	*Level of Significance*
Iowa Silent Reading Test, Advanced; CM, BM Forms							
Group I (Uniform Class Instruction)							
	Before	19	162.5	6.534	1.886	3.419	Highly
	After	19	172.9	8.268	2.387		Significant
Group II (Individualized, Self-Direction)							
	Before	18	165.8	8.589	2.295	4.013	Highly
	After	18	174.2	12.318	3.292		Significant
Michigan Speed of Reading Test, Forms I, II.							
Group I (Uniform Class Instruction)							
	Before	22	37.2	7.524	1.881	2.862	Highly
	After	22	44.8	7.494	1.874		Significant
Group II (Individualized, Self-Direction)							
	Before	21	34.7	10.608	2.573	2.867	Highly
	After	21	46.2	12.705	3.091		Significant
Morrison-McCall Spelling Scale, Lists I, II.							
Group I (Uniform Class Instruction)							
	Before	22	41.0	5.296	1.324	—.625	Not Sig.
	After	22	41.7	4.942	1.235		
Group II (Individualized, Self-Direction)							
	Before	21	42.3	6.900	1.674	.413	Not Sig.
	After	21	41.3	7.206	1.748		

Comparison of Group I with Group II on Test Scores.	*C.R.*	*Level of Significance*
Iowa Silent Reading Test, Advanced:		
Before Experiment	—1.095	Not sig.
After Experiment	.320	Not sig.
Michigan Speed of Reading Test		
Before Experiment	.788	Not sig.
After Experiment	.389	Not sig.
Morrison-McCall Spelling Test		
Before Experiment	—.585	Not sig.
After Experiment	.214	Not sig.

TABLE 7. COMPARISON OF BEFORE AND AFTER GRADE SCORES ON UNIFORM VS. INDIVIDUAL INSTRUCTION

Test *Group*	*Achievement Grade Levels*		
	Before	*After*	*Gains*
Iowa Silent Reading Test, Advanced			
Group I (Class)	10.0	12.7	2.7
Group II (Individual)	10.9	13.3	2.4
Michigan Speed of Reading Test			
Group I (Class)	9.2	11.9	2.7
Group II (Individual)	8.8	12.0	3.2
Morrison-McCall Spelling Scale			
Group I (Class)	8.0	8.4	.4
Group II (Individual)	8.4	8.0	—.4

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Chapter V

INDIVIDUALIZED INSTRUCTION: MATERIALS AND TECHNIQUES

On the basis of what is now known about individual differences the lock-step graded system in our public schools is archaic and unrealistic. Physical development, socio-economic background, educational experience, emotional stability, interests, learning rates, work speeds, motivations, achievement levels, degree of dependence, intelligence, skills, ascendency drives, and work habits are just a few of the many ways in which students are different. Not only do students differ in all these areas, but in educational experience alone they will be different in all the various subject-matter fields, in achievement in physical, social, and intellectual skills used in the subjects, and in the mastery of content in each field.

Homogeneous grouping is little more than an euphemistic sop to the realization that these differences exist and present almost insurmountable obstacles to the traditional total classroom teaching procedures. As soon as the differences are narrowed by homogeneous grouping according to one characteristic, all the other divergencies still exist. Not only that, but any learning that takes place soon spreads the group disparities into new dimensions.

Grouping within the classroom furnishes only feeble feints at meeting the problem. Nearly all teachers seem to feel that three groups provide for the problems; once the groups are structured they become nearly as permanent as the assignment to classrooms. The groups travel at different speeds, toward different goals, have different experiences, and transfer from one group to another becomes the exception rather than the rule.

And what is so magic about the number three? Diversified assignments are almost always given in trinities. When more than a hundred teachers were asked to prepare lesson plans which provided for individual differences in developing reading skills, sixty-seven uniformly gave three assignments to the high, average, and low groups; seven occasionally varied this procedure; and twenty-seven ignored the problem entirely and concentrated on uniform materials and assignments.

Most secondary school teachers still prepare a uniform lesson for the entire class. Mute evidence to this was found in the summer demonstration class experiment reported in Chapter IV. The teachers almost completely ignored good material when only fifteen copies were available for a class of twenty-two. This was true even when several levels were available in a series which could have been used on a diversified basis. When teachers used this material it was reproduced in mimeographed form to provide sufficient copies for uniform use by the entire class. A wide variety of teaching was demonstrated, much of it excellent, but in general it was on the undifferentiated basis of uniform mass teaching procedures. The teachers came from a variety of schools in several states. Although attention was not directed specifically toward diversity, the children had a wide range of ages, intellectual capacities, skills problems, social backgrounds, and motivations that were readily apparent. If the teachers taught the group on a uniform basis, it could be safely assumed that this was the typical pattern of teaching in the classrooms in the schools from which they came.

The biggest problem with any kind of grouping to meet individual differ-

ences is that grouping assumes likenesses when they may not exist. This is not to say that children should never work in groups. Group work can be very rewarding when it capitalizes on differences to bring breadth to experience. Such would be the case when five or six students read different novels of the type found in the *Scholastic Literature Unit* on courage. Discussion would high-light individual contributions, would give a wide variety of incidents to illustrate points, would sharpen and clarify the authors' divergent viewpoints. The goal of the learning and the degree to which differences would enhance or interfere with the achievement of the goal should suggest the optimum working relationship: large group, small group, entirely individual, or a combination pattern.

Because so many kinds of differences intensify the problem of a group working in unison on uniform material on reading skills, it would seem that this is one area where almost completely individualized work would give the greatest economy and the best results. Other skills, too, appear to develop best with a more individualized approach. In a study on team learning, Durrell and associates (4) found that both spelling and arithmetic skills developed much better with pairs working at varied paces than in the uniform classroom teaching situation. On the other hand, the English area with its emphasis on literature gave no advantage to one method over the other.

An experimental study reported in Chapter III demonstrated that over a hundred students working under direction of a single teacher could make significant improvement in reading and study skills. Chapter IV reported that a group of students working with a highly competent teacher in a unified classroom approach made no better improvement as measured by reading tests than did comparable students who worked in an individualized self-directive program. The improvement in the first study was approximately two grade levels; in the second study, nearly three grade levels for both groups. These experiments indicate that a completely individualized approach to reading skills development is possible. Were there any problems that appeared in the experimental set-up which would impede or preclude wide use of this method in high school? It was found that the program could be operated without expensive machines or equipment, but at the present time some special areas of difficulty exist. These will be discussed under the importance of pacing, adaptation of materials, and mobilizing motivation.

I. Importance of Pacing

If a reading improvement program did nothing more than increase the speed of reading without lowering the percentage of correct responses it would have recognizable merit. As long as the percentage of correct responses remain the same a faster reader will gain more information in the same period of time than will the slower reader. Speed is important. When all other things are equal, speed in reading, in skimming, in studying, in organizing, and in all kinds of working relationships gives the advantage to the faster individual. This is true especially in our competitive culture. Some type of pacing device should be an inherent part of any skills program. An individualized program, however, needs a pacing device or technique which is highly flexible.

If every individual is going to work on a program unique to himself, a timing device would have to be adaptable to variable starting and finishing times. A student finishing the same task before others would need to know his speed immediately and be able to start without delay of any kind on some-

thing else of his own choosing. One student might be starting, another finishing, still a third or fourth at different places in different materials. All would need to be free to work under speed pressures without being impeded in any way by the pace of the others.

An optimum pacer would have to provide for variable reading rates at a variety of reading levels in material suited to developing competence in different areas of weakness. All of these flexibilities would have to be provided simultaneously to care for the differences among students. The usual way of solving this problem is to give each student an individual pacer, and sometimes different kinds of pacers to fit the needs of a particular task. This is an expensive and cumbersome solution which multiplies cost, materials and equipment accounting, and repair services.

Another problem of flexibility is presented by the changes within each student's reading pattern. Pace changes to suit the purpose and the material. Sometimes the purpose of the student shifts as he discovers new factors or unfamiliar elements in the reading situation. He uses a fluctuating speed of perception and association when unfamiliar elements multiply. Any rigid pacing device which holds the student to a rigid rate of perception will not permit the student to weigh, evaluate, and recheck while maintaining a reasonable pressure for over-all speed. The best pacing device will permit a degree of latitude for the organizing technique to operate and will encourage judicious and rapid skimming when appropriate.

It was found that a single intermittent timer which could be set for repeated signals at variable time intervals would supply all these needs for a large group of students at a very minimal cost. While providing for speed development, it also served a number of important correlary functions in the learning process.

Pacing, or time pressure, helps to build and sustain attention. If there is only a short time before the task must be finished, students do not waste as much time getting started. When the eyes are traveling rapidly over the printed page, the ideas in the material tend to crowd out extraneous thoughts and engage the attention. Pressure of ideas is added to the pressure of the time limits, and comprehension grows with the heightened attentiveness. Nearly all poor readers perform better on appropriated reading tests than they can be expected to perform on their own when they are under less supervision. A partial explanation lies in the time pressure. The continual refocusing of the attention through the use of short-term tasks and frequent questions probably plays a part in this rise in performance, too. A timing device that would constantly remind the person at very frequent intervals that he is working for speed, would tend to develop more sustained attention on the part of the reader. This would be true especially for the very slow reader who is unsually painfully aware of his difficulty. A timing device that gave frequent signals would also be suitable for many short-term tasks, thus adding the satisfaction that finishing a task brings to everyone. Such a device would permit frequent change of tasks with the heightened interest that change brings. Conversely, such a timing device could be used for increased speed when reading lengthy assignments if the reading were paced to specific points in the material to coincide with the time signals.

There are many subtle ways that an intermittent timer works for improved motivation. If the intervals are set at frequent intervals, such as one minute, any new work can begin at any time on the next signal. Since there is no

long delay before the new work can be begun, motivation is not dissipated by an enforced waiting period. At the same time, the bell is always expected in a very brief interval, reminding the student to get ready to begin. Once ready, it is easier to go along with the timing and do the work than it would be to stop. Since each student has a limited latitude of choices as to which material he will do first and when to make changes from one type of material to another, this choice acts as motivation. The choice is never so wide that it presents a dilemma, but a choice, however limited, involves the student in the decision and is motivating. Even the fact that he can ignore the pacer when he feels a preference for a different tempo has the effect of making him inclined to work. When a student is told immediately after each question whether his answer is correct, the fact that he knows how he is doing helps him to steer his path closer to the desired goal. It is reasonable to assume that motivation develops equally well when the student is told at frequent intervals where he should be to maintain his speed. This technique of immediate reinforcement through knowledge of results is a very important characteristic of automatic teaching. When the intermittent timer is combined with scoring keys built into the materials, both rate and accuracy reinforcement of learning is provided.

Research on the Mahal Pacer. Inquiries did not reveal the existence of a low cost, intermittent timing device. A series of experimental models were used in several experimental studies and the Mahal Pacer and Pacesetters emerged from these early experiments. (8, 9)

Five experimental studies which tested a marked-book pacing technique have demonstrated that this technique develops better reading skills (2, 5, 6, 7, 11) on a wide range of reading tasks (5) and that these gains are retained as shown by one-year post-testing at both the junior high school (7) and college (11) levels. This method was the most favored by students of five different methods of speed development that were used in one study (2).

These five studies marked the evolution of a new pacing technique. The steps in this evolution were: First (2), all students reading copies of the same book previously marked to indicate where the student should be when the teacher called time at the end of short intervals. Second (11), students reading different materials marked for different reading speeds with the teacher indicating lapsed time at one-minute intervals. Third (5, 7), the substitution of an elapsed time indicator or intermittent timer (the Mahal Pacer) to free the teacher for more productive work. Fourth (6), the development of cardboard strips marked for various speeds (the Mahal Pacesetters) which could be used according to choice on any articles to replace the actual marking of books.

In 1950, Brown (2) conducted an experimental study at the University of Minnesota in which five methods of pacing reading were used. They were: (1) Harvard Films and Readings, (2) Tachistoscopic training, (3) Timed readings on a variety of materials, (4) Paced readings on a variety of materials, and (5) Master-Word-Vocabulary approach supplemented by a pocket-sized lexicon. Students ranked each method as to its effectiveness. In general, the paced reading was acclaimed more successful than the others The pacing technique worked equally well with a large group or an individual. The entire text, *Efficient Reading* (1), had been paced and sheets

with the pacing times were mimeographed and given to the individual students to permit them to work at their own speed levels. The teacher used a stop watch or a watch with a sweep second hand. At the proper time the teacher said, "next." The student adjusted his reading rate and tried to be at the proper place for each "next."

At approximately this same time another experiment using much the same pacing technique was being conducted at the University of Utah (11). One hundred and two students were given speed development using *Reader's Digests* with various articles marked for different word-per-minute intervals. Sampling indicated that five-eights inch of type was equal to about 25

TABLE VI. COMPARATIVE SCORES OF CONTROL AND EXPERIMENTAL GROUPS: BEFORE AND AFTER TRAINING AND ONE YEAR LATER

Variable Group	*Number*	*Mean*	*S.D.*	*SEM*	*Critical Ratio*
Predicted-Grade-Point-Average					
Control	78	2.18	.67	.034	
Experimental	78	2.19	1.98	.150	.006
Cooperative Reading Test					
Control					
Before	78	55.0	5.48	.388	
One year Later	78	57.4	6.92	.542	3.604
Experimental					
Before	78	54.9	7.55	.463	
One Year Later	78	62.4	5.83	.480	11.24
Experimental and Control Groups before the experiment					.165
Experimental and Control Groups one year later					6.906
Words-Per-Minute on *Reader's Digest*					
Percentage Comprehension					
Control					
One Year Later	90	328.4	47.4	7.56	
Experimental					
Before	78	228.5	30.6	6.9	
After	87	445.8	61.0	15.08	13.10
One Year Later	89	402.0	59.1	11.46	2.365
Experimental and Control Groups one year after					5.36
Experimental Group on initial and final tests					12.98
Iowa Silent Reading Test, Advanced					
Experimental Group					
Before	102	174.4	10.5	.637	
After	102	187.0	10.8	.657	13.77
One Year Later	78	184.7	10.6	1.322	1.558
Before and One Year Later					7.293

words, and a passage so marked every two and one-half inches would be suitable the *Digests*. For example, two and one-half inches would be equal to 100 to pace 100 words-per-minute reading. The students were tested before the words, and a ruler was used to compute the intervals for the markings in experiment, immediately after the experiment, and the seventy-eight students who were still at the university a year later were tested again at that time. As a control group, a sampling was drawn from the same entering freshman class to be measured on reading tests at the one-year post-testing. While this was not as satisfactory as a preselected sample on whom all tests had been made, it did furnish a source of comparison. Data on this experiment are reported in Table VI. The Experimental and Control Groups were alike in age, sex ratio, predicted-grade-point-average, and scores on the Cooperative Reading Test which was administered to all freshmen students. A year after the experiment the two groups were significantly different in favor of the Experimental Group on the Cooperative Reading Test and on speed in reading a fairly long *Reader's Digest* article. In comprehension on the *Reader's Digest* article there was little difference in the comparative scores. Both groups had made significant gains on *Cooperative Reading Test* scores, but the Experimental Group had a critical ratio on the before and after test scores that was more than three times as great as that of the Control Group.

The Experimental Group made statistically highly significant gains during the three-months of reading instruction on both the *Iowa Silent Reading Test* and in speed reading in the *Reader's Digest* materials. There was some loss of these gains during the following year, but the loss was not statistically significant. Enough of the gains remained to be significantly higher than the initial test scores by a wide margin. In all except percentage of comprehension on the *Digest* materials the critical ratios of the initial and final test scores for the Experimental Group greatly exceeded those of the Control Group.

This would indicate that the training resulted in improved speed and in better performance on tests, and that these gains tended to remain a year following the training.

During the two previously reported experiments the teachers had indicated the lapsed time interval. Since the technique was well liked and secured very good speed development, an instrument was devised to relieve the teacher for more worth-while activity. Several models were constructed which evolved into the *Mahal Pacer*. This is an instrument designed to give an audible signal every minute, continuing to do so without resetting as long as it remains turned on. The signal is loud enough to be heard by everyone in a classroom, but short enough in duration to avoid annoyance.

In 1959, Loring (7) used the Mahal Pacer in an experiment with 200 seventh graders on a matched group basis. His groups were very carefully equated on seven variables including two intelligence tests, reading test scores, parents' occupation, spelling scores, and sex ratios. The critical ratios comparing the groups were never above .620. By using the *Reader's Digest Skill Builders* along with the regular edition of the Digest he was able to provide for a wide range of reading levels. One group worked with marked Digests and used the Mahal Pacer to build speeed; the second group read the same materials without the marked-book technique. The experiment allowed for only three forty-five minute practice sessions before the post-testing. Both groups made comparable gains but not enough to be statistically significant.

One year after the experiment was over both groups were retested with highly significant gains of more than three grade levels according to the test norms. The *Michigan Speed of Reading Test* (10) was used as the testing instrument. On both the post-testing and the follow-up test a year later there was a very slight trend in favor of the marked-book pacing technique, but not enough to be significant.

In 1959-60 at the University of Vermont, Goffi (5) used four comparable groups of seventy students each in a comparison of methods of building reading speed and comprehension, namely: free reading; the *Controlled Reader* (3) with film strip projection; the marked-book pacing; and attendancee at college without any special reading program. His groups were equated on eight variable: *Cooperative Reading Test* scores, College Board Verbal Aptitude Test scores, adjusted high school graduating rank, type of high school, sex ratio, pareents' occupations, parents' schooling, students' general health. By using printed text containing the same material as that presented through the *Controlled Reader* filmstrips the following variables were held uniform for all three experimental groups: a) level of difficulty, b) content, c) tests on comprehension, d) type face, e) line length, and f) spacing. The three experimental groups met for thirty-minute periods, twice a week, for eight weeks. Pre- and post-testing were made with alternate forms of four tests: a) Cooperative Reading Test, b) Diagnostic Reading Test, Survey Section, c) Michigan Speed of Reading Test, d) Individual eye movement photographs. Not all the data from this experimental study have been analyzed at this time. From early statistical computation it appears that the marked-book pacing group was the only one to make statistically significant gains on all four testing instruments. This would seem to indicate that it permits more adaptability to various materials read. Since this study used quite careful controls of a number of variables that affect reading and had a fairly well equated control group, the findings should yield some dependable findings.

Until the spring of 1960 the Mahal Pacer technique for building reading speeds required that the books be marked in advance according to different reading rates. To avoid this tedious job the Mahal Pacesetters were devised. The Mahal Pacesetters (9) are narrow cardboard strips that can be placed along the inner margin of a page in the book being read; it is marked with arrows to indicate points in the story between which there are a given number of words.

With the pacesetters, this is the way the pacing technique works: The student selects the story he wishes to read, determining the speed at which he wishes to read it. The pacesetter which corresponds to this desired speed is placed at the inner margin of the first page of the story to be read. Then the student begins reading at the first signal of the Mahal Pacer. He paces himself to be at the next arrow when the next signal is given a minute later. To read in multiples of the original speed, he passes two, three or four arrows during the interval between signals. Other pacesetters are marked for other speeds.

The pacesetter is moved by the reader so that the arrows point to the inner margin of the page being read. Both sides are marked. When reading a page on the left, the pacesetter is at the inner margin, partially covering the page on the right. Flipped over like a page, the paceseetter will then partially cover the page on the left with the arrows pointing to the inner

margin of the page on the right. The pacesetter is moved from page to page as the reader proceeds with the story. If the reader begins overtaking his rate on successive signals, he shifts to a pacesetter set for a higher speed; he automatically knows that he improved his reading rate.

The Mahal Pacesetters were combined with the Mahal Pacer in an experiment conducted on Long Island in early 1960. Herber (6) used one hundred and eight seventh-grade students in five classes with an average I.Q., of 93. The *Courage* anthology from the Scholastic Literature Unit, designed for eighth graders, was used with the pacesetters for five daily forty-five minute reading periods. Two forms of the *Michigan Speed of Reading Test* were used for before and after testing. Data indicate that the students went from an average of 96 to 132 words-per-minute, from an average of 90 to 95 percent comprehension; this is equivalent to 1.8 grade levels of growth in one week's time. Teachers reported that "students markedly increased their reading speed; were able to recall what they had read with efficient accuracy; and that they were highly motivated by the success they experienced."

There were no control groups used in this experiment; the pre- and post-testing were only a week apart and the gains reported may be, at least in part, the result of practice on the test. Subsequent testing and further research that is more carefully controlled is needed. It may be that the skimming to mark the books contributes a valuable practice not obtained when the pacesetters are used. Most of the students in the experiments reported here have helped to prepare the books for use; this would lead to better motivation and heightened interest in the outcomes, and therefore more possibility of success.

Another experiment is in process now in Westerly, Rhode Island. Marked books, previously prepared, will be tested against copies of the same books with the Mahal Pacesetters. In a companion study, the Courage anthologies will be marked by the students who are going to work with the marked-book technique and the matched group will work with Mahal Pacesetters in other *Courage* books. This should give us information as to whether the Pacesetters can be substituted with good results for the markings in the books.

The marked-book technique was used in the mass differentiated skills instruction reported in Chapter III. The Mahal Pacesetters were used in the summer program reported in Chapter IV. Both groups made good gains in speed development. The self-directed individualized group used the pacesetters and made slightly more improvement on the *Michigan Speed of Reading Test* than did the teacher taught group who did not use the technique of speed development. All seven studies involved in this experimentation, except Loring's, confirm the value of the use of this method of speed development, and Loring's brief experiment found this method as good as the free reading of the same materials. These studies were made in a wide variety of situations, in five different states, and by different individuals. They all seem to confirm the usefulness of this technique as a way of building better reading speeds.

Uses for the Mahal Pacer. The Mahal Pacer can be used in a number of ways:

1. To develop faster speeds with the *Mahal Pacesetters* or the marked book technique.
2. For paced skimming to find the answers to questions within a limited

time. This is suited to any list of questions and a wide variety of materials.

3. To develop rapid perception with cross-out exercises where the student works to see how many lines he can cover in a set time, crossing out the word that is the stem word in the line.
4. For concentrated work on details. In a set time-limit the student works with short paragraphs and detailed questions to see how many he can answer correctly and to attempt to better his score on successive exercises. This is the method used with the McCall and Crabbs, *Standard Test Lessons in Reading,* Teachers College, Columbia University, 1950.
5. For speed in following directions. Stroud, Ammons and Bammon, *Improving Reading Ability,* Second Edition, Appleton-Century-Crofts, 1956, has a number of exercises of this type as well as other speeded comprehension drills.
6. For timing tests with accuracy. In such tests as the *Iowa Silent Reading Test* the subtests are short and require accurate timing. Finishing times are signaled without delay.
7. For speed tests in typing and short-hand.
8. For rapid word association work, synonym-antonym drill, work with multiple meaning words to see how many definitions are usages can be listed in a given time.
9. For more speed in applied phonics. The World Book Company *Word Analysis Cards,* developed by Durrell and associates, lend themselves well to this kind of practice.
10. For speed in writing headlines. Cut the headlines from news items clipped from the daily paper. Have the students pass and write headlines on paced, timed basis. This discourages waste of time in getting at the main idea and leads to skillful skimming.

Many more ways to use the Mahal Pacer will suggest themselves to the reader as he works with various materials.

2. Materials

In examining materials suitable for mass differentiated skills instruction almost all that is now on the market needed some kind of adaptation. Only the *SRA Reading Laboratories,* developed by Science Research Associates, and the recently published *Word Analysis Cards* of World Book Company were ready for immediate use. A number of workbooks provide sequence and multi-level exercises, but the fact that they are in workbook form and often provide no periodic tests to permit moving on to higher level exercises when the student demonstrates competence acts as a hindrance in their use. It was found that a number of these work books could be adapted to the more flexible use if two work books were purchased at each level, cut-up, mounted on colored oaktag, and answer keys attached for ready reference. A uniform color code was used for materials in different workbooks which were all at the same level of difficulty. It is a serious handicap when the materials are not self-scoring because the reinforcement to learning that immediate knowledge of results can give is lost if the student waits for the teacher to score the exercises. Self-scoring materials involve a responsibility on the part of the student and take away some of the less fruitful drudgery from the teacher. If possible, the answers to questions should be attached to the card on which the exercise appears. This saves time and avoids confusion for the student.

Of course the answers will have to be hidden during the time that the student is answering questions or working on the reading material. Periodic tests, heavily centered on the vocabulary of the particular level of difficulty, seemed to be adequate to permit the student to move on to higher level materials when the skills were the same at successive levels. In nearly all instances these tests had to be developed.

The *Reader's Digest Skill Builders* and the *Reader's Digest,* Educational Editions have the answers in the Teacher's Edition. If the answers were on a separate page as they once were, this material could be used immediately by ordering nothing but Teacher's Edition. However, this material can be adapted by mimeographing answer sheets and stapling them or scotch-taping them to the inside cover at the back of the Digests. The exercises are good and varied. Guide sheets can take the children to specific series of similar exercises, but the cutting up and mounting the really valuable ones saves time and assembles materials for a specific skill into one unit.

In adapting materials, since only one copy is really needed at any specific time, any good materials in current newspapers, journals, and periodicals of all types can be utilized. Scotch type is the best way found to mount these on the cards since thin papers and easily destroyed materials can be preserved and not smeared as they would be with pasting. If the scotch tape is stripped around the edges of the material to over-lap onto the oaktag, fairly durable materials result.

Much of the material now on the market is too carelessly structured for completely self-directed activity for the student. It needs to be more meticulously designed to meet learning problems and it needs much more try-outs in situations with children and revisions based on these trial periods. Directions in the workbooks and texts are confusing when the material is segmented for fluidity in individual use. Very careful directions need to be given with the material, in simple vocabulary, and in as brief a form as is understandable. This requires much thought, trial with students to see that all understand immediately without any further explanation from the teacher, and revision if there is any confusion when read silently.

In constructing materials for use in areas of scarce supply, three experiments throw some light on problems of difficulty in thinking that different types of material present. Abstract materials seem about twice as difficult as concrete material when timing, syllable count, number of works, length of sentences, multiple-meaning words, and number of ideas are kept constant. Ninety-six teachers in three different classes at Boston University were given two short tests of ability to read in thought units. These tests were given on an alternating basis with half the groups taking the tests in one sequence and the other in the reverse sequence. The answers to the questions on the abstract material were only 46 percent as accurate as the answers to the questions on the concrete material. If this is confirmed by further research, it suggests a great hurdle in thinking in going from concrete to abstract reading materials.

Two studies structured on the same hypotheses are now in progress to determine the elements of difficulty and their sequence in reading maps, charts, and graphs. Dewey in North Carolina and Leach in Massachusetts, Master's candidates at Boston University in the School of Education, are conducting parallel experiments with materials constructed on the same premises. Both are using matched control groups and rather tight experimental designs. Early data seem to indicate that the sequence of difficulty of tasks in actual practice

from easiest to most difficult are: a) securing factual data from a single graphic aid, b) securing factual data from two or more graphic aids, and of equal difficulty, securing factual data from one graphic aid when it is buried in a book and requires locational skills to find it, c) solving a problem with material secured from more than one graphic aid in one or more books, d) inferential thinking involving only one graphic aid, e) inferential thinking involving more than one graphic aid.

If more detailed analysis of the results confirm these early trends, it would appear that inferential thinking is much more difficult than multiple tasks involving locational skills in securing facts. The heirarchy by which thinking functions in relationship to reading can present many pitfalls unless some of these problems are recognized and explored further.

In general, even with all the short-comings mentioned here, the published materials will be freer of error and better in service to the children than too hastily prepared and reproduced materials that the teacher makes herself. The students can be enlisted in preparing the cut-up materials for the later individualized skill development. When the students help they become more involved in the possibilities, more responsible in an attitude of wanting to learn from the materials, and more cooperative.

The comments already given apply to materials designed for specific and orderly skills development. In an approach to meeting individual needs this is only a small part of the total picture. Multi-level materials are needed in all the content fields to meet the differences in intelligence and reading competency. No amount of teaching is going to remove these problems from the picture. Additional training in reading simply widens the spread. In fact, if the differences in reading ability have a close correlation with intelligence when analyzed on an individual basis, the teaching of reading in the school system is probably pretty good. Since variations in intelligence and reading competency will always be a disrupting force in a unified teaching approach, efforts must be made to provide many materials that cover common concepts for different levels of understanding. Rewritten and down-graded materials are not the answer because they fail to capitalize on the power that individual differences can contribute when used to widen horizons. In the literature area much is being done with paperback books to provide this variety of materials. At the recent National Council of Teachers of English Convention in Chicago (1960) the tendency to drop anthologies in favor of eight or ten complete works in paperback editions received frequent comment. If any particular choice proved unfortunate it became an easy matter to eliminate and substitute a more suitable selection. That many teachers would welcome this approach is evidenced by the heavy pre-edition orders the Scholastic Services have received for their *Scholastic Literature Units* that are now being developed. These units are organized around consideration of a common theme or problem in a wide variety of easy to difficult books. Catering to teachers who would feel insecure without a common unit which all students can read simultaneously, there are forty copies of an anthology of short selections. This moves next into six copies each of six novels, and finally provides a much wider range of titles from which the students can read. This approach can be very fruitful in the types of adaptations that it provides. With a resourceful teacher, the variety of activities that it suggests are legion.

This approach to multiple materials for content mastery would be especially appropriate in the social studies area and in all the less structured subjects. By

making selection from the R. R. Bowker Company's quarterly, *Paperbound Books in Print,* a wide variety of titles can be selected in many subject areas from the 11,000 titles currently listed. A rapid exploration through this reference revealed at least 375 books that would be helpful in exploring occupational information and insights at the high school level. From this material, a much more selective choice could be made.

There are areas where the publishers are proliferating editions of the same standard books and neglecting wide and saleable factual favorites. For instance, out of eighty-two classics most recommended for junior high school and high school students, forty-one are published by several publishers, some by more than eight publishers at the present time. Sixty-nine percent of these books are paperbound at the present time; one of them cannot be bought in either a hard-back or paperbound complete version. It is much more difficult to select a variety of books in the content fields outside the literary area to develop concept teaching from multiple sources. Since the factual books are in scarce supply and in growing demand this would seem to be a resourceful publisher's paradise. The simpler presentations are especially lacking, and we do have a large number of students who need them desperately. In spite of the unevenness of the offerings, much can be done in organizing available materials around concepts on the multiple book approach.

3. Mobilizing Motivation

Since so many teachers with whom this has been discussed seem to fear lack of control in a completely individualized approach to skills teaching, some suggestions on ways to organize such a program to mobilize motivation on the part of the students seem in order.

A number of teachers have had unfortunate past experience with adversely oriented and obstreperous students in the schools, and they rightly fear the chaos such a student can cause in a program of this type. A great deal can be done by proper planning and structuring of the way any program is introduced and carried on within the school. The suggestions here would apply to any academic program and a number of them have almost universal application.

First, do very careful planning in detail before the program is introduced. Try to provide for as many contingencies as possible. Decide how you are going to involve the administrators, then the teachers, then the community, and finally the children in a dramatic exposé of the need for the program. To do this, proper ways of measuring that need must be found. In academic subjects, a wealth of tests are available from which to choose; instruments that will reveal the discrepancies between potential and performance. Plan to be able to state specifically how many children are two, three, four, or more grade levels retarded in the light of intellectual capacity. Note special grades or ability levels where the retardation seems concentrated, and be able to be specific as to particular students. This makes the presentation valid and more arresting. It is absolutely essential to disturb complacency and stir-up the interest and support of the people involved. And the whole school and community should be involved in such a program. Be sure that materials, methods of appraising and recording progress, ways of advertising and displaying student gains, physical considerations of room and arrangements are all thoroughly explored and ready in advance. Dream about this a little; worry over the possibilities; above all, visualize how it will take place. Work stations placed at appropriate spots, if properly provided, can channel student traffic,

cut down on congestion, save time and avoid the occasion for disorderly conduct. Small things can cause much confusion if not properly forseen and provided for in advance. Test the materials and the organization plan with a small pilot group; this might be the teachers. It must involve actual handling of the materials and attempts to follow-through on the directions.

When the program is introduced some factors will be very important to the success of the program. In the first students taken into the program be sure to include students who are socially important at the school: athletes, student-elected officers, etc. Do not permit every one to come into the program; play up its selectivity and, there-by, its desirability. Present the goals of the program in such a way that it is readily apparent that the students will profit socially, academically, and independently. Absolutely no outward forcing of the student to take the class or enlist in the program should be tolerated, but it should be presented so attractively that there will be many compelling reasons for the student to want to be a part of all this. Change is motivating, so be sure that materials and methods of working present novelty and new ways of working. Hold back some of the more attractive materials and techniques and plan to introduce them when the program needs a shot in the arm to add new vigor. When materials are passed out to the students, preserve the element of surprise by passing them face-down to ensure curiosity to rivet attention at the time of presentation. It is very important that each student understand exactly what each exercise can do for him, how he can work to get the most personal reward from the material, and how improvement will be observed and related to his goals. The material must look as if it could give the desired improvement and the student must see the relationship if he is going to become involved in his own progress.

Competition with the students' own scores, competition with other students of equal potential, group competition for the individuals who value most the social situation, and individual rvialry for the exceptional students will all heighten motivation.

Students will work best if failures are kept as private as possible and successes are known by the group. Recognition of individual achievements of students should offer the chance for good students to fail and for poor students to succeed. Honor rolls of names of students who make most progress on specific areas are helpful. If certain students seem to be winning most of the honors, introduce new elements or change the rules.

Pace the work with briskness of presentation, time-limits, new ideas in areas where the program seems to be sagging. When a plan for checking how many synonym-antonym associations could be made in a given period of time was introduced into this material which was ordinarily merely timed, the number of students electing the material increased.

A set and preannounced time for conclusion of the program will be important to success. Progress must be appraised, summarized, and given publicity with students, parents, teachers and administration. This publicity must involve plans for the immediate future and ways to capitalize on the unfinished aspects and recently discovered new information. The plan for the future ought to have new and added aspects, unanswered questions to be explored, plans for the exploration. Motivation is always crucial to learning. Any program which fails to plan ways to disturb the status quo, mobilize the desire for change, and capitalize on human needs, deserves to fail.

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Chapter VI

SUMMARY AND CONCLUSIONS

The summary of these experiments and hypotheses will be presented quite briefly in answer to the questions posed in Chapter I.

Is it possible to organize a program of massed differentiated skills instruction in reading that will be fairly inexpensive to operate, motivating and rewarding to the students, and capable of demonstrating improvement of skills? Such a program was planned and presented in Chapter II. It had the following characteristics:

1. Multi-level self-scoring material, organized on the basis of small units complete and interchangeable at any one level.
2. Pretesting for diagnosis of skills weaknesses, a method of giving this information to the students individually, and an interrelation between the test results and subsequent tasks to achieve improvement in the areas of weakness.
3. Self-direction, continuous evaluation, and responsibility for improvement in the hands of each individual student.
4. Folders with work materials, progress charts, instructions, and recognition of individual student's records were provided on an individual basis.
5. Work stations placed in a scattered pattern in a large room around which students working on particular skills could gather for easy access of materials and equipment.
6. A single teacher whose responsibility it was to appraise the work in the folders, initiated work on new materials, and act as a trouble shooter when problems arose.
7. A pacing device that was flexible enough to serve all students who were working on a variety of materials, at many levels, for many kinds of skill development, at various speeds, and with different starting and stopping intervals.
8. Support of the school and the community with good public relations established, students electing the program but on a selective basis which established prestige in participation.
9. Evaluation of results with knowledge and recognition of success presented to the school, the student, and the parents.

Could this program serve more than a hundred students for mass differentiated skills instruction and still provide for different learning rates, levels of reading ability, practice at points of weakness, working speeds, interests, and intelligence? Chapter III reported the operation of this program with 114 students participating in a single room, three afternoons a week for seven weeks, including eighteen practice hours and subsequent testing and evaluation.

1. The program functioned well with no untoward discipline problems, with an inexperienced teacher in charge of the program, with significant improvement on three different reading and study-skills tests, with high cooperation of the students in the success of the program.
2. Special areas of weakness were: insufficient orientation of students to the materials in the initial presentation because of poor acoustics and

architectural obstructions in the room; and inadequate directions and insufficiently tested materials.

3. Students made approximately two grade levels of progress.
4. Students made statistically significant gains on three different reading and study-skills tests, seemed to enjoy the program, and evidenced growth in ability to operate on a self-directive individualized basis with acceptance of responsibility for their own learning.

How does an individualized, self-directive program compare with the teacher-directed unified classroom? Chapter IV presented a matched group experiment comparing these procedures.

1. Both groups made statistically significant gains on two different reading tests; gains of nearly three grade levels after six weeks of practice.
2. The gains on the *Michigan Reading Test* were slightly in favor of the individualized, self-directive program, but not statistically significant.
3. The students who worked in the teacher-directed classroom seemed somewhat more satisfied and identified better with each other.
4. The younger students in the individualized, self-directive program had less trouble in assuming responsibility for their progress, and, as a whole, this group seemed more "mature" to the teachers who were observing the experiment.

What are the special handicaps to initiating such a program in the schools on more than an experimental basis? Chapter V reported on four special areas of difficulty.

1. Teachers are afraid of the program and not convinced it will work under ordinary circumstances. They view teaching from the unified classroom approach and find the individualized self-directive program as much too revolutionary.
2. Research was reported on a new pacing device that demonstrated significant results in four of the five experiments in which it was used. These studies which have taken place in five states in dispersed parts of the country demonstrated that the marked-book pacing technique develops better reading skills on a wide range of reading tasks, and that these gains are retained as shown by one-year post-testing at both the junior high school and the college levels. This method was the most favored by students of five different methods of speed development that were used in one study.
3. There are few multi-level skill-building materials for use in the reading field at the present time. Work-books that are in a multi-level series tend to freeze the student to one level until he is completely finished with the book, seldom provide answer keys for self checking in convenient access to the student, and do not have periodic tests for early advancement to higher levels. Cut-up workbooks, mounted on oaktag, with answer keys attached to the exercise, were explored as a possible, but unsatisfactory solution. The possibility of concept teaching in the content fields with multi-level books through use of paperbound editions was discussed. Problems of insufficient low-level factual materials present a stumbling block.
4. Since motivation is crucial to learning, ways must be developed to mobilize motivation for the self-directed individual if a completely individualized approach to reading skills development is to succeed.

Appendix A

BIBLIOGRAPHY OF SKILL BUILDING MATERIALS

The materials in the bibliography were surveyed and evaluated by students in the Reading and Study classes at Boston University. Prices are approximate and subject to fluctuation.

Materials are grouped under four headings: (1) Comprehension, (2) Spelling, (3) Word Analysis, and (4) Vocabulary. The format throughout will follow a uniform pattern with the author, title, publisher, and date at the left side of the page; the grade level and price at the right side of the page; and the annotation below. Workbooks which can be easily cut apart and used on a multi-level unitary basis as described in Chapters II, III, IV, appear below with the following numbers: 17, 23, 24, 44, 86, 94.

1. Comprension

1. Altick, Richard D. — 10-up
   Preface to Critical Reading — $2.85
   Henry Holt, 1951.
   Planned to improve reading at mature levels. Includes work on connotation, denotation, diction, and understanding various types of reading materials.

2. Bailey, Matilda and Leavell, Ullin W. — 7-9
   Mastery of Reading — $ .84
   American Book Company, 1951.
   Series of three books and workbooks. Single reading skills are stressed in each chapter. Useful for developmental as well as remedial students.

3. Baker, William D. — College
   Reading Skills — $1.50
   Prentice-Hall, 1953.
   Offers 24 selections on self-improvement in reading and study habits. Timed reading with comprehension checks and tests requiring more than factual recall. Divided into two sections: one on basic informational skills and one on appreciative and critical thinking skills.

4. Bell Telephone Company — 4-9
   Telezonia — Free plus postage.
   Bell Telephone Company.
   Unit includes telephones, directories and 51 film strips. Unique approach for teaching many reading skills such as following directions, skimming. Variety for remedial students in junior high school.

5. Boas, Ralph P. and Smith, Edwin — 9-12
   Enjoyment of Literature — $3.50
   Harcourt, Brace, 1950.
   Material for use in teaching enjoyment in poetry, prose (fiction, non-fiction, drama). Deals with great writers in various literary fields.

6. Brown, James I. — 12-up
   Efficient Reading — $3.00
   D. C. Heath, 1952.
   Offers 65 brief reading selections for rate and comprehension practice. Vocabulary and recall are both tested but there are no specific exercises for higher level skills.

7. Brueckner, Leo J. and Lewis, W. D. — 4-up
DIAGNOSTIC TESTS AND REMEDIAL EXERCISES IN READING — $ .72
John Winston Company, 1947.
Contains a variety of remedial exercises on rate, phrase reading, word mastery, and comprehension.

8. Center, Stella S. — Mature Reader
THE ART OF BOOK READING — $3.50
Charles Scribner's Sons, 1952.
Provides help in reading a greater variety of books with fuller comprehension. Topics discussed are: how to read a sentence, how to read a paragraph, how to read classics and literature of information, how to expand vocabulary. Many fine literary excerpts are included.

9. Cosper, Russell & Griffin, E. Glenn — 10-up
TOWARD BETTER READING SKILL, Second Edition. — $1.95
Appleton-Century-Crofts, 1959.
This book, intended primarily for the freshman college level, contains factual and humorous selections, short essays on specific reading skills, word lists, tests and a reader's progress chart.

10. Dale, Edgar — 10-14
HOW TO READ A NEWSPAPER — (Not available)
Scott, Foresman, 1941.
Has been used to stimulate critical reading.

11. Dallman, Martha and Sheridan, Alma — College
BETTER READING IN COLLEGE — $3.00
The Ronald Press, 1954.
This book, emphasizing mainly improvement for college students in need of remedial help, is geared directly to college work. Such skills as the following are covered: building a good vocabulary, finding the meaning of a sentence, reading a college assignment. "Later selections of the workbook are so planned that exercises can be taken from textbooks in current use by the student."

12. Elferet, W. and Weinstein, A. — 10-up
ACHIEVING READING SKILLS — $2.40
Globe, 1958. (Not evaluated.)

13. Feigenbaum, Lawrence H. — 4-8
EFFECTIVE READING — $2.40
Globe, 1953.

14. Feigenbaum, Lawrence H. — 8-10
SUCCESSFUL READING — $2.40
Globe, 1958.
Designed as remedial reading texts. Brief reading selections of low vocabulary difficulty. Selections are divided into two groups: Reading to Learn, and Reading for Social Living. Exercises on reading tests, drills, and word games. Good vocabulary work.

15. Flint, Paul H. and others. — College
THE ATLANTIC MONTHLY STUDY GUIDES — $ .50
The Atlantic Monthly, accompanies the magazine.
Includes selections and exercises on such skills as: preparation for reading, vocabulary, spelling, historical background, interpretation of slanted writing, etc. Very good.

16. Gainsburg, J. C. and Spector, S. I. 3-6; Remedial 7-9
BETTER READING $2.56
Globe Book Company, 1943, 1952.
Provides exercises in skimming, main ideas, making inferences, outlining, careful reading, and study skills.

17. Gates, Arthur I. and Peardon, C. O. 3-6; Remedial 7-9
PRACTICE EXERCISES IN READING $1.45
Bureal of Publications, Teachers College, Columbia, 1933.
A series of four workbooks with exercises designed to improve four types of silent reading ability: getting general significance, predicting outcomes, following directions, and reading for details. May be used with retarded readers.

18. Gerkin, C. D. 9-12
STUDY YOUR WAY THROUGH SCHOOL. $ .50
Science Research Associates, 1947.
A pamphlet on study methods with illustrations. Has short tests.

19. Gilbert, Doris W. Adult
POWER AND SPEED IN READING $3.50
Prentice-Hall, 1954, 1956.
This book, usable by both instructional groups and by individuals, has two main purposes: (1) to provide exercises in efficiency in basic speed and comprehension skills, and (2) to give guidance and practice in developing higher level skills. An unusually good summary of the meaning and types of reading skills, appears in the introduction. The remainder of the book covers such skills as rate, comprehension, speed of perception, vocabulary, skimming, and interpretive skills. Reading samples are brief and varied. Lists of appropriate supplementary material and reading tests are included.

20. Glock, Marvin D. 11-14
THE IMPROVEMENT OF COLLEGE READING $3.25
Houghton-Mifflin, 1954.
Over 100 articles, excerpts and exercises for improving rate, comprehension and vocabulary. Four types of exercises, included in each lesson, accompany four varieties of reading material. Objective tests, rate charts and complete diagnostic tables for self-measuring are included.

21. Gray, William S.; Monroe, Marion, and Artley, A. Sterl. 7-8; Remedial 9-12
BASIC READING SKILLS FOR JUNIOR HIGH SCHOOL USE $1.20
Scott, Foresman and Company, 1957.

22. Gray, William S.; Horsman, Gwen, and Monroe, Marion 9-12
BASIC READING SKILLS FOR HIGH SCHOOL USE $1.24
Scott, Foresman and Company, 1958.
These workbooks provide refresher programs on reading skills for students not reading up to their grade level.

23. Grover, C. C. and Stone, Clarence R. 4-12
PRACTICE READERS $ .68
Webster, 1947.
Each of the four books contains a number of short stories followed by questions on comprehension through (1) direct details, (2) implied details, (3) meaning of the whole, (4) reference skills. Used widely in remedial work.

24. Guiler, W. S. and Coleman, J. H. 4-12
READING FOR MEANING $ .88
Lippincott, 1955.
Reading units of approximately 300 words followed by a glossary of terms which carry unusual meanings. Exercises to improve: (1) word meaning, (2) central idea, (3) recall of details, (4) organization, (5) drawing conclusions.

25. Harcourt, Brace 7-12
ADVENTURES IN LITERATURE, Olympic Edition (See catalogue)
Harcourt Brace. Reading Workshops 7-10 only.
This is a complete, integrated program with record albums, anthologies, and reading workshops to develop reading skills. A large chart indicates specific skills and pages which develop them. Colorful and attractive.

26. Harris, Ruby M. 4-10
HANDBOOK OF MAP AND GLOBE USAGE (Not available)
Rand McNally, 1959.
Methods and techniques are related to mathematics and science as well as social studies; develops skills and specific techniques and exercises in map and globe reading. Glossary gives etymology of the words listed. Well indexed. Large book, 390 pages.

27. Hovious, Carol 9-10
FLYING THE PRINTWAYS $3.20
D. C. Heath, 1938.
Numerous short reading selections followed by exercises stressing main ideas, details, word study, phrasing, association, mental pictures, following directions, rapid reading, outlining. Tests of speed and comprehension included. Teacher's manual provided.

28. Hovious, Carol 9-12; Remedial 13
FOLLOWING PRINTED TRAILS $2.48
D. C. Heath, 1936.
The most advanced of the Hovious' books in this series, it furnishes a wide variety of experiences in developing basic study skills in reading. A small manual of tests and keys accompanies the book. Work on association locational skills, and sequential development of skills is particularly good. In spite of being somewhat dated, this book has much value.

29. Hovious, Carol 7-9
NEW TRAILS IN READING $3.48
D. C. Heath, 1956.
Intended to replace FOLLOWING PRINTED TRAILS, which it doesn't, this book is very good with junior high students.

30. Hovious, Carol and Shearer, Elga M. 6
WINGS FOR READING $3.40
D. C. Heath, 1942.
Stresses self-inventory, main ideas, details, word study. Skills are discussed and followed by a group of short stories and exercises giving practice on the skill. Additional tests and exercises are provided. Good science and social studies material.

31. Johnson, Eleanor M., et al. 1-9
DIAGNOSTIC READING WORKSHOP SERIES $ .36
Charles E. Merrill.

May be used independently of any reading series. Stresses comprehension. vocabulary, and word mastery. Good material for independent remedial work.

32. Johnson, Eleanor M. 7-12
MODERN READING SKILL TEXTS, Revised $ .64
Charles E. Merrill, 1958-1960. Orders of 10 or more $ .48

A series of three workbooks for grades 7-9, 8-10, and 9-12, respectively. Books are approximately two grade levels easier than the placement level of the students they are designed to serve. Forty-two reading skills and subskills are developed through functional exercises. Tests are included for pre-diagnosis and post-testing for improvement.

33. Johnson, Elearnor M. 1-6
READING SKILL TEXTS $ .64
Charles E. Merrill, 1946, 1957. Quantity: $ .48

Series of seven workbooks. Short reading selections followed by exercises on comprehension, word meaning, and word analysis. Very good.

34. Jones, Edward S. 11-13
IMPROVEMENT OF STUDY HABITS $1.25
Foster & Stewart, 1939.

Discusses study skills such as notetaking, improving memory, how to use a library, getting the habit of concentration, etc. Some chapters have pertinent study exercises on the skill discussed. There are tests with national norms for entering college freshmen.

35. Judson, Horace and Baldridge, Kenneth P. College-Adult
THE TECHNIQUE OF READING $4.00
Harcourt-Brace, 1954.

Exercises for improving rate, comprehension and vocabulary. Offers suggestions for application of these in reading in several content fields and other applied reading situations.

36. Kay, Sylvia 11-14
READING CRITICALLY IN THE FIELDS OF LITERATURE AND HISTORY $2.50
Bookman Association, 1952.

Selections in history and literature with questions intended to promote reader's ability to form his own conclusions, to discover the author s conclusions, detect biases, inaccuracies or omissions.

37. Kayford, Harrison and Vincent, Howard P. College
READER AND WRITER $3.15
Houghton Mifflin, 1954.

Twenty-three sections contain pieces in several genres clustered around a central theme. Illustrates variety which is possible in handling themes and ideas by different minds working from different points of view. An alternate table of contents is arranged by types of writing. Many good comparative analyses are possible for the reader.

38. Keasbey, William and David Bonita 6-12
WONDER STORIES FROM NATURE $ .80
Charles E. Merrill Books, 1937.

Thirty-five short stories followed by comprehension checks; gives number of words for timed reading exercises. Offered for 6th and 7th grades and remedial work in 7-12 grades.

39. Kelley, V. H. and Green, H. A. 9-13
BETTER READING AND STUDY HABITS $ .64
World Book Company, 1947.
Designed for discovery of student's own difficulties with particular chapters devoted to self-improvement of specific skills, such as: speed reading, vocabulary development, improvement of comprehension, study habits, preparation for examinations. Gives tests, exercises and drills.

40. Leavell, Ullin W. and Davis, Betty 1-8
READING ESSENTIALS SERIES $ .68
Steck and Company, 1953.
Workbook-type developmental reading materials intended to promote growth in comprehensions of various types, word analysis, and use of the dictionary. Books 7 and 8 cover phrase reading, reference material, some critical reading, skimming, and work attack. Also offered a booklet NEW GOALS IN READING for the slow and retarded readers in the middle grades.

41. Leedy, Paul H. Adult
READING IMPROVEMENT FOR ADULTS $6.95
McGraw-Hill, 1956.
Designed for self use by the general adult readers.

42. Lehman, P. W. 9-13
EXERCISES IN PRECIS READING, SENIOR AND JUNIOR PRECIS PADS
Palmer Company, 1947.
Paragraphs in which there is one illogical word. Task is to read carefully to find this one word. A very good means of improving comprehension. Contains a vocabulary section and an 11 point grading scale to be filled in by teacher and student.

43. Levin, Frank K. Adults
HOW TO READ FOR SELF-IMPROVEMENT. $3.25
American Technical Society, 1960.
Ideas on reading, study, using books, etc. Contains self-analysis charts, chapter previews and summaries, quotations, sketches, and similar devices.

44. McCall, W. A. and Crabbs, Lelah Mae 2-12
STANDARD TEST LESSONS IN READING $ .45
Bureau of Publications, Teachers College, Columbia, 1950.
Five workbooks consisting of 78 pages each; a page represent a reading selection with multiple choice questions based on reading. Individual record blanks for recording answers and space for entering grade score for each lesson are provided. Used widely in remedial teaching.

45. McCall, W. A. and Norvell, G. W. 7-9; Remedial
IMPROVE YOUR READING $ .96
Harcourt-Brace, 1942.
Thirty-one short reading selections with questions on comprehension. Grade scores for rate and comprehension are included. Good exercises.

46. Mason, J. D. and O'Brien, F. E. Beginning Adults
PRACTICAL READER FOR ADULTS $1.84
D. C. Heath, 1945.
Series of three simple texts for teaching reading to illiterate or foreign-born adults. Uses signs and other functional materials. Teacher's edition contains suggested procedure, word lists, etc.

47. Merton, Elda A. and McCall, William — 1-6
THE MERTON-MCCALL READERS — $1.56
Laidlaw, 1948.
Seven work-type readers with checks on comprehension and vocabulary study.

48. Miller, Lyle L. — College
INCREASING READER EFFICIENCY — $3.25
Henry Holt, 1956.
Built on technique of seeking the ideas behind the words.

49. Mott, Carolyn and Baisden, Leo — 4-10
THE CHILDREN'S BOOK ON HOW TO USE BOOKS AND LIBRARIES — (Not available)
Charles Scribner's.
(The 1948 book is out of stock.) Revision to appearin 1961.

50. Murphy, George E. et al. — 7-12
LET'S READ — $3.96
Holt, Rinehart, and Winston, 1953-1955.
Four volumes: Reading for Fun, Reading for Experience, Growing Up in Reading, Reading for Life. Each selection followed by exercises on comprehension and vocabulary. Suitable for individual or group instruction. Reading ability of grades 5-8. Teacher's manual available.

51. Orr, Ethel M.; Reed, Edna M. and Franseth, Jane — 4-6; Remedial 7-9
READING TODAY — $2.96
Charles Scribner's Sons, 1951 and 1955, respectively.
Offered for developmental reading. Selections arranged around a central topic, followed by comprehension checks.

52. Pulliam, R. A. and Leavell, Ullin W. — 3-6; Remedial
PRACTICE BOOK IN PHRASE READING
Steck Company, 1947.
Materials designed to develop quick recognition of thought units. Flash cards followed by underlining in the book, using phrases flashed, filling in blanks with flashed and written phrases, matching phrases and incomplete sentences, and reading a story marked off in phrases.

53. Reader's Digest Educational Services, Inc. — 2-6; Remedial 7-12
READING SKILL BUILDERS — $ .56
Reader's Digest.
Ten books, two each on 2, 3, 4, 5, and 6 grade level. Rewritten selections from the Reader's Digest with skill development exercises. Format is similar to the Reader's Digest. New additions total 19 Skill Builders.

54. Reader's Digest Educational Services, Inc. — 7-8
ADVANCED SKILL BUILDERS — $ .60
Reader's Digest.
Four books at 7-8 grade level designed for junior high school and for poor readers in high school.

55. Reader's Digest Educational Services, Inc. — 7-12
SECRETS OF SUCCESSFUL LIVING — $ .57
Six books for English, Social Studies, and Guidance, grades 7-12.

56. Reader's Digest Educational Services, Inc. — Adults — remedial
READER'S DIGEST READINGS — $ .60
Reader's Digest.
Two books designed for people with English as a second language and for slow readers, 6th grade and up.

57. Reader's Digest Educational Services, Inc. — Beginning Adults
ADULT EDUCATION READERS — $ .60
Reader's Digest.
For adults and teen-agers just learning to read.

58. Richards, I. A. and Gibson, Christine — Beginning Adults
FIRST STEPS IN READING ENGLISH — $ .35
Pocket Books, Inc.
Language through pictures series. Helpful in teaching oral English reading and basic alphabet functions. Vocabulary is controlled to 320 words. In extra large type which would make it useful in sight-saving classes.

59. Robinson, Francis P. — College
EFFECTIVE STUDY, Revised. — $4.50
Harper and Brothers, 1946.
Eight chapters on higher-level work skills, four on educational deficiencies. Appendices include quizzes, diagnostic tests, and keys. Widely used.

60. Russel, David H., et al. — 1-8
READING AIDS THROUGH THE GRADES, Revised. — $1.10
Bureau of Publications, Teachers College, Columbia, 1957.
Three hundred developmental reading activities organized according to remedial reading procedures.

61. Ryan, Nellie F. — 7-8
YOUR READING GUIDE — $ .45
Lyons and Carnahan, 1945.
Two work-book type reading and study skills manuals for grades 7-8.

62. Salisbury, Rachel — 9-12
BETTER WORK HABITS — Out of print.
Scott, Foresman, 1932.
Contains detailed practice exercises on many different work and study skills. Suitable for independent individual work as well as class work. Exceptionally strong on organizational skills.

63. Saltzberg, Geraldine — 9-12
KNOWING YOUR NEWSPAPER — $1.00
World Book, 1953.
Designed to help students become discriminating newspaper readers.

64. Scholastic Magazine — 8-12
THE PRACTICAL ENGLISH READING WORKBOOK — $ .35
Scholastic Magazine, Inc.
Two manuals for grades 8-10 and 10-12. Series of drills for speed and comprehension on varied current topis, set up as self-grading drills for speed and comprehension. (Special rates of $ .10 to PRACTICAL ENGLISH subscribers.)

65. Science Research Associates 2-8

SRA ELEMENTARY READING LABORATORY $48.00

Science Research Associates. Student Record Book $ .39

Teacher's Handbook $ .95

This and the following seven laboratories are designed as multi-level unit material that is corrected by the student himself. The material frees the student to move ahead as fast and as far as his learning rate and capacity will le him. This particular laboratory is intended for use with accelerated 2-3 grades, average 4-6 grades, and retarded 7-8 grades.

66. ---------- 4

SRA READING LABORATORY, 11a $48.00

Science Research Associates.

Revision of the ELEMENTARY READING LABORATORY. This and 11b, 11c were designed to meet the needs for additional materials at each grade level as new material for the students who were proceeding through a series of grades in which the laboratory was used. Designed for use at 4th grade level; includes 2-7 grade materials.

67. ---------- 5

SRA READING LABORATORY, 11b $48.00

Science Research Associates. Record Books and Teacher's Handbook available.

Revision of the SRA ELEMENTARY READING LABORATORY. Designed for grade 5; 3-8 grade materials.

68. ---------- 6

SRA READING LABORATORY, 11c $48.00

Science Research Associates. Record Books and Teacher's Handbook available.

Revision of the SRA ELEMENTARY READING LABORATORY. Designed for grade 6; 4-9 grade materials.

69. ---------- 7-12

SRA READING LABORATORY, SECONDARY EDITION $46.50

Science Research Associates. Record Books and Teacher's Handbook available.

Intended for normal students in grades 7-10, slower students in grades 11-12. Reading difficulty levels grades 3-12.

70. ---------- 9-13

SRA READING LABORATORY, IVa $54.50

Science Research Associates. Record Books and Teacher's Handbook available.

Known as the College Prep Edition. Reading difficulty levels, grades 8-14.

71. ---------- 10-14

SRA READING FOR UNDERSTANDING $29.50

Science Research Associates. Record Books and Teacher's Handbook available.

Designed to give practice on higher level skills. More difficult materials than those contained in the other laboratories. More independence from guides.

72. ---------- 4-8
SRA Spelling Laboratory (Not available)
Science Research Associates, 1961.
This laboratory is just being released for distribution. Contains spelling wheels for the student to use much as "reading machines." The one problem with most of this material is that of transfer; particularly important with spelling. This laboratory probably does not solve the transfer to good spelling in writing.

73. Scripture, Elizabeth and Greer, Margaret 7-12
Find It Yourself $ .40
H. W. Wilson, 1949, 1955.
Pamphlet on books, library use, and reference materials. Designed to cover seven weeks. Contains a pretest of skills.

74. Shaw, Phillip B. College
Effective Reading and Learning $3.50
Thomas Y. Crowell, 1955.
College oriented book of reading and study skills.

75. Sheldon, William D. and Carrillo, Lawrence W. College
College Reading Workbook $3.00
Syracuse University Press, 1953.
Intended to promote growth of vocabulary and comprehension skills among college freshmen. Length of 36 reading selections ranges from 250-6000 words. Satisfactory for use with college preparatory groups in grades 11-12.

76. Simpson, Elizabeth A. 5-13
SRA Better Reading Books, I-III $2.40
Science Research Associates, 1950.
Each workbook contains 20 short articles followed by detailed comprehension checks, rate scales. Intended for measuring progress. Comprehension questions are multiple-choice, very detailed.

77. Simpson, Elizabeth A. and Gilmer, E. C. 5-6; 7-12 remedial
Developmental Reading Series for Improved Reading Habits $1.10
Educational Testing Bureau, 1950.
These books are 5th grade reading difficulty. Stories have appeal to adolescent interests and are good remedial reading materials. Word study and comprehension skills are emphasized.

78. Smith, Donald E. P. Adult
Help Yourself to Efficient Reading $ .50
University of Michigan Press, 1953.
Exercises designed for self improvement in all reading skills with answer keys and a comprehension-rate chart.

79. Smith, Elmer; Edman, Marion, and Miller, Georgia E. 7-9, Remedial
Invitation to Reading $2.96 Book Three only
Harcourt-Brace, 1945.
A series of three books, written two grade levels below the grade at which they are designed to be used. For use with retarded readers. Reading matter low in interest appeal. Books One and Two are out of print.

80. Smith, Harley A. and King, Ida Lee Adult slow readers
How to Read Better $ .88
Steck Company, 1952.
Designed primarily for adult beginners, but on a more advanced level than I Want to Read and Write.

81. Smith, Harley A. and King, Ida Lee — Adult Beginners
I WANT TO READ AND WRITE — $ .88
Steck Company, 1950.
A workbook planned for teaching adults to read and write. A vocabulary of 391 words, with much repetition.

82. Smith, Nila Banton — 7-12
BE A BETTER READER, Books I-VI — I-III $1.64; IV-V $1.68; VI $1.92
Prentice-Hall, 1956-1960.
Six books offering development of special reading skills in science, mathematics, social studies, and literature. Common basic skill practice is also provided. Important because of the development offered in the content fields where students often lack skills.

83. Spache, George D. — 11-13
THE ART OF EFFICIENT READING — $3.25
Macmillan Company, 1955.
Aids for self-diagnosis focus attention on individual problems and their correction. Manual comes with or without answer keys for self-or teacher-controlled scoring.

84. Spencer, Paul R., et al. — 4-9; Remedial 9-12
FINDING NEW TRIALS (Fourth grade difficulty) — $2.50
EXPLORING NEW TRAILS (Fifth grade difficulty) — $2.50
TRAVELING NEW TRAILS (Sixth grade difficulty) — $2.50
DRIVING THE READING ROAD (Seventh grade difficulty) — $2.70
PROGRESS ON READING ROADS (Eighth grade difficulty) — $2.70
Lyons and Carnahan, 1945-1954.
A series of readers of progressively greater difficulty, containing exercises to develop skills such as summarizing, reading maps and charts, using reference materials, reading arithmetic problems, and using the dictionary. Very helpful for retarded readers.

85. Staten, Thomas F. — Adult and College
HOW TO STUDY — $ .60
Montgomery, Alabama: How to Study, 1954.
Contains three chapters on study method, the learning process, and study techniques. Only principles are given, no practice provided.

86. Stone, Clarence, et al. — 4-7; Retarded 6-12
PRACTICE READERS I to IV — $ .76
Webster Publishing Company, 1948.
Short articles with questions to develop the reading skills of: noting details, noting implied details, identifying main idea, distingushing fact from opinion, identifying antecedent of given word, finding synonyms, etc. Stress speed and accuracy. Progress records included.

87. Strang, Ruth — 7-12
STUDY TYPE READING EXERCISES, Revised — $ .80
Bureau of Publications, Teachers College, Columbia.
Teacher's Manual $ .30
Good reading habits described in uniform exercises of 1,000 words each, followed by comprehension checks. Good for work on logic and organization with simple abstract material. Good spring-boards for discussion. Vocabulary of fifth grade level.

88. Strang, Ruth — College
STUDY TYPE READING EXERCISES, COLLEGE LEVEL — $1.00
Bureau of Publications, Teacher's College, Columbia, 1951.
Comparable to STUDY TYPE READING EXERCISES, Revised, but on a more demanding level.

89. Strang, Ruth and Roberts, Ralph — 7-12
TEEN-AGE TALES, I and II — $2.56
D. C. Heath, 1959. Teacher's Manual $ .40
A series of readers specifically designed for teen-age readers of low reading ability. Content has appeal to adolescent interest, but plot is uncomplicated and stories are short. Good with remedial readers.

90. Stroud, J. B. and Ammons, R. B. — College Freshmen
IMPROVING READING ABILITY, Revised — $2.35
Appleton-Century-Crofts, 1957.
Provides exercises in visual analysis, speeded comprehension of words, phrases, paragraphs, directions, and longer units. A portion of the manual is concerned with critical reading skills.

91. Niles, Olive S., et al. — 7-12
TACTICS IN READING and HANDBOOK OF SKILLS Cards, $.35 each (50 cards)
Scott, Foresman and Company, Galaxy Program, 1960.
Designed to be used with the Vanguard anthology. When the tests in the HANDBOOK OF SKILLS on reading indicate that the student needs additional help, the unit practice cards in the TACTICS IN READING provides the practice. Colorful and interesting. Good study skills development in HANDBOOK.

92. Tibbitts, F. Lyman — Adult-College
STREAMLINE YOUR STUDY-HABITS — $1.50
Mission Press, Los Angeles, 1947.
Only principles are given with no practice provided. A list of helpful books is included. Appealing format with provocative cartoons.

93. Toles, Elsie, et al. — 6-9
READING MOTIVATED SERIES — $2.60
Harr Wagner Publishing Company, 1949.
Three books with exciting adventure in the first part of the book, followed by supplemental information. Excellent tie-in with American Western History. Titles: THE MYSTERIOUS SWAMP RIDER, DESERT TREASURE, and THE SECRET OF LONESOME VALLEY.

94. Triggs, Frances O. — 3-12
READING EXERCISES — (Not available)
Committee on Diagnostic Reading Tests, 1955.
A series of exercises in manilla folders containing various kinds of reading practice exercises.

95. Weber, Christian O. — College
READING AND VOCABULARY DEVELOPMENT — $2.95
Prentice-Hall, 1951.
Very high secondary, college preparatory, college level. Good materials, but difficult. Expendable and cannot be reused. Initial and final tests provided; ten sets of exercises with twenty alternating word-study projects, involving mastery of 500 carefully selected words. Carry-over of skills into daily reading is emphasized.

96. Wedeen, Shirley U. — College
College Remedial Reader — $3.95
Putnam Sons, 1959.
Designed to be used with study-type developmental reading courses.

97. Weigand, George and Blake, Walter S., Jr. — College
College Orientation. — $3.25
Prentice-Hall, 1955.
A study-skills manual for college freshmen. Practical approach with work sheets and graphs for record of improvement.

98. Wilking, S. V. and Webster, R. G. — College-Adult
A College Developmental Reading Manual — $3.75
Houghton-Mifflin, 1943.
Thirty-one lessons with content taken from actual college texts in economics, government, history, literature, mathematics, physics, psychology, science, and sociology, provide practice material in a variety of reading skills. An appendix contains tables of roots and affixes. Graph inside back cover provides for readily available record of progress.

99. Wilkinson, Helen and Brown, Bertha — 4-9
Improving Your Reading — (Not available)
Noble and Noble, 1938.
Stresses oral reading, word study, phonic elements, phrase reading, overcoming repetitions, increasing accuracy, silent reading, main ideas, evaluating facts and events, memorizing and finding facts. Includes games and exercises. Good for use in remedial teaching.

100. Witty, Paul — 9-12
How to Become a Better Reader — Cloth $4.67; Paper $3.33
Science Research Associates, 1953.
Twenty lessons on reading for self-improvement with exercises stressing varied skills. Twenty additional reading exercises of greater length are provided for practice.

101. Witty, Paul — 7-9
How to Improve Your Reading — $4.95
Science Research Associates.
Stresses speed, reading of graphic materials, study skills, self-improvement, and vocabulary work.

102. Witty, Paul — 9-12
Streamline Your Reading — $ .50
Science Research Associates, 1949.
A forty-page pamphlet written to make the student aware of his reading habits. Student is motivated through suggestions and sample experiences to seek improvement. Supplementary only; insufficient practices provided.

103. Witty, Paul and Bricker, Harry — 7-10
You Can Read Better — $ .50
Science Research Associates.
Numerous suggestions on self-improvement.

104. Wood, Evelyn and Barrows, Marjorie — 7-12
Reading Skills — $3.64
Holt, Rhinehart and Winston, 1958.
Skills are developed individually; includes tests, charts, practices to measure success. Correlates vocabulary development from fourth to ninth grade level with reading for meaning. Has a set-up to use shutter-card.

105. Wrenn, C. Gilbert — College
PRACTICAL STUDY AIDS — $ .25
Sanford University Press, 1931. (20th printing 1957)
Fifteen-page booklet directs attention to time budgeting, general study procedures, check tests of pertinent habits, note-taking, examinations, working conditions and attention to evaluating results.

106. Wrenn, C. Gilbert and Larsen, R. P. — 9-12; College
STUDYING EFFECTIVELY, Second Edition. — $3.95
Stanford University Press, 1955.
A time-tested manual of study methods includes: study-habits inventory with weighted scoring keys to give comparisons of the student's own scores with other students' performance, indicating frustration points where practice is needed; weekly schedule plan development; work on improving reading, memory, concentration, note-taking, examination performance, "Survey Q3R" method of study.

107. Wrenn, C. Gilbert — 9-12
STUDY HINTS FOR HIGH SCHOOL STUDENTS — $ .25
Stanford University Press, 1932.
For high school use. Includes budgeting time, increasing ability to concentrate, taking notes, proper working conditions inventory.

108. Wright, E. L. — 9-12
Essex Publishing Company, 1950.
Forty reading selections for ten-minute practice exercises in silent reading. Quizzes on word usage, comprehension and problems involving self-expression. For use with typical high school students.
READING FOR COMPREHENSION — $ .60

109. Zimbal, Samuel F. — 9-12
LESSONS IN READING COMPREHENSION — $1.05
Amsco, 1951.
Reading material taken from newspapers and magazines. Emphasis on summarizing, vocabulary building, main ideas. Good material for oral recall.

2. SPELLING

110. Almack and Staffelbach — 7-9
THE STANFORD SPELLER — Textbook $1.00
Laidlaw Bros. — Workbook $ .60
Three textbooks for seventh, eighth and general junior high school spelling improvement. Workbooks available only in the seventh and eighth grade materials.

111. Barker, Roland — 9-12
KNOW YOUR WORDS — $3.60
Macmillan, 1947.
A spelling book using test-study-test approach. Provides exercises in word analysis and study of spelling conventions.

112. Betts and Arey — 7-8
LANGUAGE ART SELLERS — Textbook $1.44
American Book Company. — Workbook $ .80
Title of the seventh grade edition is NEW FRONTIERS; eighth grade, LOOKING AHEAD.

113. Breed and Rogers — 2-8
MY WORD BOOK — Textbook $1.60; Workbook $ .80, Practice Book $ .48
Lyons and Carnahan. — Log Book $ .28
Material can be secured in both textbook or clothbound and workbook or paperback editions. Separate practice books and MY LOG BOOK are available for use with the clothbound edition.

114. Coon, Horace — 7-12
HOW TO SPELL AND INCREASE YOUR WORDPOWER — $ .35
New American Library.
Popular approach, written for the general public. Good motivation.

115. Hanna and Hanna — 2-8
BUILDING SPELLING POWER — Cloth $1.11; Paper $. 60
Houghton-Mifflin.
Teacher's Edition is available for each grade, clothbound $1.11; paperbound $ .87.

116. Kottmeyer and Lambader — 4-9
SPECIAL MAGIC, Book I and II — $ .44 and $ .48
Webster.
Two workbooks designed to develop the techniques of work perception in reading and spelling. Book I is for grades 4-6; Book II is for grades 7-9.

117. Lambader, Kottmeyer and Wickey — 2-8
GOALS IN SPELLING — $ .48
Webster, 1951.

118. Lambader, Kottmeyer, Wickey — 2-8
SPELLING GOALS — $1.04
Webster, 1951.

119. O'Donnell, T. B. — 1-3; Remedial
READING ROAD TO SPELLING — $ .88
Row Peterson, 1959.
Although this series of workbooks on spelling is designed for use with grades 1-3, severely retarded spellers in upper grades and junior high school could profit from the approach.

120. Patton, David H. and Johnson, Eleanor M. — 9-12
COMMON WORDS — $ .76
Charles E. Merrill.
Book I is for grades 9-10; Book II, for grades 10-12. "Guarantees mastery" of 1600 high utility words; offers a supplementary list of 400 words in general science, chemistry and physics.

121. Patton, David H. and Johnson, Eleanor M. — 2-8
SPELLING FOR WORD MASTERY — Teacher's Manual $1.00; Textbook $1.52;
Charles E. Merrill, 1959. Skill text $ .76; Spelling Notebook $ .32
Emphasizes core lists, phonics training, word analysis, and dictionary work at the seventh and eighth grade levels. The spelling notebooks are made to accompany the textbook edition.

122. Pocket Books, Inc. — Adult
PERFECT SPELLING — $ .35
Pocket Books, Inc.
Designed for popular consumption.

123. Plunkett, Mildred B. 4-12
A Spelling Workbook $1.64
Manter Hall School.
The Manter Hall workbooks are designed to help students who wish high-level attainment. The materials are very good. This workbook emphasizes spelling generalizations, syllable divisions, and dia-critical markings.

124. Science Research Associates 4-8; Remedial
SRA Spelling Laboratory (Not available)
Science Research Associates, 1961.
A multi-level approach to spelling, with spelling wheels to give student immediate confirmation of success on each word. Allows each student to review as long as he needs additional practice and to move ahead as rapidly as his personal record warrants it. Price will be above $20.00 in all probability.

125. Shefter, Harry 9-12, Adult
6 Minutes a Day to Perfect Spelling $ .31
Scholastic Book Services.
An activity book planned for a twelve-week program with five simple steps to follow during six minutes each day. Basic (including "100 Spelling Demons"), average, and advanced lists comprise the 2500 selected words.

126. Young, I. H. 9-12
The Words We Use $ .72
D. C. Heath, 1947.
A series of workbooks designed to help high school students to spell and use words which most often trouble them. Four books, grades 9-12, respectively.

3. Word Analysis

127. Armstrong, Leila and Hargrave, Rowena 1-6
Building Reading Skills $ .64 to $1.56
McCormick-Mathers, 1951-1958.
Series of six workbooks, phonic key cards and supplementary cards, games, etc. Practice in word analysis, sight vocabulary, phrase recognition, etc. Can be used in classroom and remedial work, and may be used with older pupils.

129. Dolch, E. W. 1-9; Remedial
Phonic Materials List prices lower to schools
Garrard Press.
There are a wide variety of games and materials available at this source. Those most useful in remedial work at the junior high school and high school levels are:

Basic Sight Cards, Grades, 3-up.	$1.10
Group Sounding Grades, 3-8 grades.	$2.10
Sight Phrase Cards, 2-up.	$1.00
Sight Syllable Solitaire, 3-up.	$2.10
Take, 3-up.	$1.50
Vowell Lotto, 2-up.	$1.98

130. Dunfee, Maxine — 1-3; Remedial
SOUNDS WE USE — $ .48
Wilcox and Follett, 1946.
Series of three books teaches the following: Book I, single vowels and consonant sounds; Book II, consonant blends, digraphs, phonograms; Book II, silent letters, the effect of "r", three-letter blends, syllabication, multiple meaning words.

131. Durrell, Donald D., et al. — 4-6; Remedial
WORD ANALYSIS CARDS, A, B, and C — $2.00
World Book Company.
Three packs of 30 cards each, designed to give practice on applied phonics through word classification exercises with words in the child's speaking vocabulary but not in the reading vocabulary. Experimentally tested with good word analysis development.

132. Eichler, G. A. and Snyder, Emma — 1-5; Remedial
WORDLAND SERIESS — $ .40
Continental Press, 1951.
A series of five workbooks for teaching phonics. Book 5 could be used to the best advantage with junior and senior high school pupils who were poor in phonics since it reviews all the phonic principles. If student is having much trouble, the appropriate additional manual could be used to meet him at his achievement level. Titles of Books 1-5; are: FUN IN WORDLAND, A TRIP THROUGH WORDLAND, ADVENTURES IN WORDLAND, A FLIGHT THROUGH WORDLAND, THROUGH SPACE TO WORDLAND.

133. Gibbons, Helen and Cook, Clara R. — 1-3; Remedial
WE READ, WRITE, SPEAK, AND SPELL, Books I to III — $1.25
Educational Test Bureau, Philadelphia, 1941.
Books II and III would be the most useful for severely retarded readers at junior high school.

134. Gillingham, Anna and Stillman, Bessie W. — Remedial
GILLINGHAM MATERIALS — $3.00 to $12.50
25 Park Avenue, Bronxville, New York
A revised 1960 GILLINGHAM MANUAL, price $12.50, cannot be used with many of the previously devised materials. It would be wise to investigate the manual before ordering any of the materials, which include such items as: Phonic Drill Cards, Phonetic Word Cards, Syllable Concept, Little Stories, Introduction to Diphthongs, Dictionary Technique.

135. Hay, Julie and Wingo, Charles E. — Remedial
READING WITH PHONICS — $4.00
Lippincott, 1948.
Exercises on single letter sounds, combinations, etc. Accompanying workbooks. Majority of the practices involve isolated words or word families apart from context or meaning.

136. Hegge, T. G. and Kirk, S. A. and Kirk, W. D. — 1-4; Remedial
REMEDIAL READING DRILLS — $1.75
George Wahr, Ann Arbor, Michigan, 1936, 1955.
Stresses vowels, consonant combinations, phonograms, and suffixes. The drills are designed primarily to aid children who have become retarded in reading. Words apear in isolation apart from any context or picture clues.

137. Hert, May and Morgan, Ben — Remedial
THE SOUND WAY, Books I and II — $ .60
Benton Review Publishing Co., Inc., Fowler, Indiana.
For remedial work, special classes, and beginning adults. Stories selected to correlate with English and social studies, spelling, phonetic skills, dictionary work. Handwriting and tests are included in the eleven units of eight pages each.

138. Kenworthy Educational Service — 1-7; Remedial
KENWORTHY PHONIC AIDS — $ .50 to $5.95
Kenworthy Educational Service, Buffalo, N. Y.
Materials include cards and games for use with elementary reading programs and for supplementary use in the home. All the materials are more appropriate with young children than with the retarded readers in secondary school.

139. Kottmeyer, William — 3-9; Remedial
WEBSTER WORD WHEELS — $5.60
Webster Publishing Company.
Set of 63 easily assembled wheels to use with retarded readers in elementary grades through high school. Included are 25 beginning blends, 20 prefix and 18 suffix wheels.

140. McCrory, Mae and Watts, Pearl — 1-5; Remedial
PHONIC SKILLTEXTS — $ .48
Charles E. Merrill.
Training in word recognition is given in contextual setting rather than by a program of isolated drill exercises. Emphasizes ways of making sounds, rhymes, jingles, phonetic ear training, word study and word building.

141. Meighen, Mary, et al. — 1-6; Remedial
PHONICS WE USE — $ .52
Lyons and Carnahan.
Five books for pupils who lack phonic skills. Can be used with junior and senior high school pupils who lack skill in word attack.

142. Noon, Elizabeth F. — 1-6
BASIC PHONIC SERIES — Single folders $2.50; Set $11.75
F. A. Owen.
Five folders. Each folder contains 16 charts and 16 flash cards for teaching consonant and vowel sounds, prepositions, prefixes, syllabication, contractions, and advanced phonic forms.

143. Pulliam, R. A. and Leavell, Ullin W. — 2-4 and 5-7
PHONO-WORD WHEELS — $2.25 each
Steck Company.
A series of five sets of between 15 and 17 wheels per set for practice in word attack. Each set gives practice with initial combination, prefixes and suffixes.

144. Roberts, Clyde — 7-12
WORD ATTACK, A Way to Better Reading — $1.72
Harcourt, Brace, 1956.
Book contains a teacher's guide. It presents word attach with five approaches: contextual, auditory, structural, visual, and kinesthetic. A recommended list of classroom materials is included. Exercises in the student section of the book give practice on a wide variety of word attack skills.

145. Stacy, C. R. and Barnes, M. — 1-3; Remedial
PHONETIC WORD DRILL CARDS — $2.50 each
Beckley-Cardy, Chicago.
Three sets, ten drill cards in each, contain phonograms. Initial sound cards are suspended by plastic rings from top of each basic card. As initial sound cards are flipped, a new word appears. Nearly 900 words are formed with the three sets.

146. Stone, Clarence R. — 1-6; Remedial
EYE AND EAR FUN — $ .44 to $ .64
PHONIC WORK BOOKS — $ .32 to $ .52
Webster.
Phonetic workbooks used widely in intermediate grade and junior high school with remedial students.

4. VOCABULARY

147. Bellafiore, Joseph — 9-12
ADVENTURE WITH WORDS — $ .75
Amsco, 1945.
Three paper-bound, pocket-sized booklets, each containing a variety of brief exercises in vocabulary. Each booklet offered for a year's work in vocabulary development in high school. Also WORDS AT WORK.

148. Block, Forst, and Goldberg — 7-9
USING YOUR DICTIONARY — $ .64
Winston, 1958.
Exercises and practice in each of the fundamental dictionary skills.

149. Christ, Henry I. — 9-12
WINNING WORDS — $3.24
D. C. Heath, 1948.
A workbook on rather difficult words with Part I devoted to building vocabulary and Part II to using words.

150. Davis, C. Rexford — College
VOCABULARY BUILDING — $2.95
Dryden Press, 1951.
Contains exercises on dictionary, suffixes, Greek and Latin derivatives, and application to usage. A twenty-one page word list is the basis of the practice drills.

151. Ernest, Margaret S. — 6-12
WORDS: ENGLISH ROOTS AND HOW THEY GROW — $2.75
Knopf, 1937.
Etymology of names of persons, places, etc., and the history of changes in common English words. Useful as a reference and for developing appreciation of the structure of language growth.

152. Forst, Isabelle F. — 7-9
A WORLD OF WORDS — $ .80
John C. Winston Co., 1949.
A vocabulary workbook utilizing the play and puzzle interests of pupils in building vocabulary. The vocabulary is centered on units within the experience of children this age.

153. Funk, William — Adult
SIX WEEKS TO WORD POWER — $ .35
Pocket Books, Inc. Cardinal edition, 1955.
Appeals to personal ambition and satisfactions. Emphasis is on *power* words. Vocabulary is such that it would be suitable only for mature vocabulary growth. Too advanced for high school.

154. Funk, William and Lewis, Norman — College; adult
THIRTY DAYS TO A MORE POWERFUL VOCABULARY, Revised — $ .45
Washington Square Press, 1960.
Over 3,000,000 copies of this book have been sold. Wide appeal to adult population. Suitable for vocabulary growth at an easier level than SIX WEEKS TO WORD POWER. Could be used in high school.

155. Gilmartin, John — 10-12; adult
BUILDING YOUR VOCABULARY — $2.76
Prentice-Hall, 1960. (17th printing, 1959.)
Twenty-one self checks and sixty-one vocabulary quizzes provide recognition of progress. The bulk of the book is filled with "171 Vocabulary Builders", usually one-page in length. Pronunciation, figurative expressions, spelling rules, prefixes and suffixes are included. An index to words allows ready reference to any word studied.

156. Gilmartin, John — Adult
WORD POWER — $4.95
Prentice-Hall, 1950.
Also sold by the same publisher under the title, INCREASE YOUR WORD POWER. Consists of 150 exercises in pronunciation, word parts, word origins, spelling and word meanings. Answer keys and tests are included.

157. Gilmartin, John — 7-9
WORD QUIZ — $ .60
American Book Company, 1942.
A series of 32 exercises with emphasis on word meanings, word pronunciations, and the use of the dictionary. Based on Webster's A DICTIONARY FOR BOYS AND GIRLS.

158. Green, Amsel — 9-12
WORD CLUES — $2.40
Row Peterson, 1949.
Provides organized practice through 36 lessons on a large number of Greek and Latin roots, prefixes and suffixes. Other suggestions for individual and group activities with words are included. A teacher's guidebook is available: WORD CLUES GUIDE.

159. Hardwick, H. C. — 7-13
WORDS ARE IMPORTANT — $ .35
C. S. Hammond, 1951.
A series of six vocabulary workbooks, each presenting 350 words stressing dictionary definitions and use in context. Words are chosen from the Thorndike and Lorge *Teacher's Word Book of 30,000 Words.*

160. Hart, Archibald and Lejeune, F. — 9-12
THE GROWING VOCABULARY — $2.50
Dutton, 1940.
Word list based on THORNDIKE CENTURY JUNIOR DICTIONARY. Consists of four parts providing for interesting word practice. Frequently varied.

161. Hart, Archibald — 9-13
TWELVE WAYS TO BUILD A VOCABULARY — $2.95
Dutton, 1939.
Practice in use of synonyms, antonyms, use of dictionary, idioms, prefixes, word derivation, etc.

162. Jones, W. Powell — 10-13
PRACTICAL WORD STUDY, Revised — $1.95
Oxford University Press, 1952.
Workbook stressing roots and affixes, dictionary use, and word derivation.

163. Ketchum, Roland and Greene, J. E. — 9-12
IMPROVING YOUR VOCABULARY AND SPELLING — (Not available)
Noble and Noble, 1945.
Offers 50 exercises in recognizing and using words, in the use of the dictionary, and some suggestions on spelling. Lists are made of related words. Good variety on over-worked words.

164. Lewis, Norman, et al. — 4-8; Remedial
ADVENTURES IN DICTIONARY LAND — $ .64
American Book Company.
A series of three workbooks on use of the dictionary, vocabulary development.

165. Lewis, Norman — Adult
WORD POWER MADE EASY
Doubleday, 1950. — $2.21
Pocket Books, Inc. — $ .35
Exercises based on word parts and related words. A vocabulary builder planned on a three-week period of study.

166. Mallery, Richard D. — 9-14
WORKBOOK FOR ENGLISH VOCABULARY BUILDING — $1.50
D. C. Heath, 1948.
Exercises on context clues, roots and affixes, synonyms and antonyms, and use of the dictionary.

167. Manter Hall School — 6-12
VOCABULARY BUILDERS — Teacher's Key $ .25 — $1.00
Manter Hall School, Cambridge, Massachusetts.
Separate workbooks for grades 6-12. Lists the words used and includes exercises on these word lists.

168. Miller, Ward S. — 9-12
WORD WEALTH — $1.96
Holt, 1948, 1958.
Exercises in meanings and uses of 750 word vocabulary. Contains 27 units on "base" words plus 7 "Jackpot Units" which group words according to common roots and prefixes. Following a number of units, tests check development and mastery.

169. Miller, Ward S. — 7-9
WORD WEALTH, JR. — $2.24
Holt, 1950.
Junior high school companion book to WORD WEALTH. Contains 75 weekly units on word study and spelling.

170. Nurnberg, Maxwell and Rhodes, W. T. 9-12
How to Build a Better Vocabulary $3.95
Prentice-Hall, 1949.
Words discussed and analyzed. Good study of prefixes and roots. Cartoon illustrations from magazines and newspapers. Many ideas and frequent check tests.

171. Permabook 7-12
Crossword Puzzle and Word Game Dictionary $ .35
Permabooks.
Wide appeal for developing interest in words.

172. Radke, Frieda 9-12
Living Words $2.00
Odyssey Press, 1940.
Difficult vocabulary building exercises with attention to word origins, word families, words often confused, spelling, and use of the dictionary. Excellent feature is the "service vocabulary" including words used in basic school subjects, business, music, and other fields.

173. Radke, Frieda 10-12
Word Resources $2.20
Odyssesy Press, 1955.
Two hundred exercises designed for self-teaching. Includes words from many special fields such as music, drama, law, and medicine. Special features include help on improvement of pronunciation patterns. Good for more advanced students.

174. Richards, I. A., et al. Foreign students
English Through Pictures, #2 $ .35
Pocket Books.
For people with English as a second language.

175. Robbins, A. A. 7-8
Word Study for Improved Reading $1.32
Globe Book Company, 1954.
Emphasis on word structure and analysis with particular attention to spelling, meaning, and use of words in context.

176. Rockowitz, Murray 7-12
Crosswords for Teen Agers $ .25
TAB Books, Scholastic Book Services, Inc.
Classified as easy, medium, and hard puzzles. Each puzzle centers around a theme.

177. Rosenberger, Marjorie 9-12
Mark My Words $ .96
World Book Company, 1947.
Word games based upon spelling, meaning, pronunciation of approximately 3,000 words. For college preparatory students. Format is not particularly attractive.

178. Rudd, Josephine 7-9
Word Attack $2.00
Educators Publishing Service, Cambridge, Mass., 1961.
Ten lessons to strengthen word recognition and word meaning skills. Each lesson has four sections: instruction, review, test, practical application. Ten tests are in an accompanying booklet. Master copy for teachers contains answers.

179. Scholastic Book — 7-12
TAB Crossword Puzzles — $ .25
Scholastic Book Services, TAB Book Club.
Contains fifty of the best puzzles from *Scholastic*.

180. Warner, J. R. and De Vitis, A. A. — College
Words in Context — (Not available)
Appleton-Century-Crofts, Spring 1961.
Approaches vocabulary building through the reading of sixteen modern essays with accompanying vocabulary exercises on the words as they appear in the context. Designed to take approximately fifteen weeks or one semester in college. Contains a diagnostic test, four progress achievement tests, and a final test appraisal, all on vocabulary.

181. West, Michael and Endicott, S. G. — Foreign Students
New Method English Dictionary — $9.50
Longmans, Green and Company.
Within a vocabulary of 2,000 words (rearranged in the light of the Lorge-Thorndike semantic frequency count), 24,000 words, meanings and phrases see simplified and explained. The idiomatic use of the various words are also explained.

182. Works, Austin M. — 6-12
Vocabulary Builder I-VII — $ .75 each
Educators Publishing Service, 1953. (Cambridge, Massachusetts.)
Exercises provide practice in use of the dictionary, word analysis, analogies, context clues. Books appear to be arranged in reverse order with Book I as the most difficult.

183. Young, I. H. — 9-12
The Words We Use — $ .80
D. C. Heath, 1947.
A four-book series designed to help high school students master frequently used words with which they have trouble. While primarily a spelling series, there is help on dictionary work and pronunciation and developing word meanings.

A number of dictionaries are designed to help students who are not adept in use of the usual adult dictionaries. A sampling of them follows: See 181 above.

Scott, Foresman, Company:
- Thorndike-Barnhart Beginning Dictionary, Grades 4-5 — $3.20
- Thorndike-Barnhart Junior Dictionary, Grades 5-8 — $3.00
- Thorndike-Barnhart Advanced Junior Dictionary, Grades 7-9 — $4.00

Winston:
- Winston Dictionary, Intermediate Edition, Grades 4-8 — $3.76
- Winston Dictionary for Schools, Grades 7-10 — $4.32
- Winston Dictionary Senior Dictionary, Grades 9-12 — $5.20

Appendix B

DIRECTORY OF PUBLISHERS

American Book Company, 55 Fifth Avenue, New York 3, New York
American Technical Society, 848 East 56th Street, Chicago 37, Illinois
Amsco School Publications, Inc., 225 West 57th Street, New York 19, New York
Appleton-Century-Crofts, Inc., 35 West 33rd Street, New York 1, New York
Atlantic Monthly Press, 8 Arlington Street, Boston 16, Massachusetts
Beckly-Cardy Company, 1900 North Narrangansett Avenue, Chicago 39, Illinois
Bell Telephone Company, 185 Franklin Street, Boston, Massachusetts
Benton Review Publishing Co., Inc., Fowler, Indiana
Bookman Associates, 31 Union Square West, New York 3, New York
Committee on Diagnostic Reading Tests, 419 West 119th Street, New York 27, New York
Continental Press, Elizabeth Town, Pennsylvania
Thomas Y. Crowell Company, 432 Fourth Avenue, New York 16, New York
Doubleday and Company, Inc., Garden City, New York
Dryden Press, 31 West 54th Street, New York 19, New York
E. P. Dutton and Company, Inc., 300 Fourth Avenue, New York 10, New York
Educational Test Bureau, 3433 Walnut Street, Philadelphia, Pennsylvania
Educators Publishing Service, Inc., 301 Vassar Cambridge, Massachusetts
Essex Publishing Company, Hapeville, Georgia
Foster and Stewart, 210 Ellicott Street, Buffalo 3, New York
Garrard Press, 510 North Hickory Street, Champaign, Illinois
Globe Book Company, 175 Fifth Avenue, New York 10, New York
C. S. Hammond and Company, 515 Valley Street, Maplewood, New Jersey
Harcourt, Brace and Company, 383 Madison Avenue, New York 17, New York
Harper and Brothers, 49 East 33rd Street, New York 16, New York
Harr-Wagner Company, 609 Mission Street, San Francisco 5, California
D. C. Heath and Company, 285 Columbus Avenue, Boston 16, Massachusetts
Henry Holt and Company, Inc., 383 Madison Avenue, New York 17, New York
Holt, Rhinehart and Winston, 383 Madison Avenue, New York 17, New York
Houghton-Mifflin Company, 2 Park Street, Boston 7, Massachusetts
Kenworthy Educational Service, 45 N. Division Street, Buffalo 3, New York
Alfred A. Knopf, Inc., 501 Madison Avenue, New York 22, New York
Laidlaw Brothers, 328 South Jefferson Street, Chicago 6, Illinois
J. C. Lippincott Company, East Washington Square, Philadelphia 5, Pennsylvania
Longmans, Green and Company, Inc., 55 Fifth Avenue, New York 3, New York
Lyons and Carnahan, 2500 Prairie Avenue, Chicago 16, Illinois
Macmillan Company, 60 Fifth Avenue, New York 11, New York
McCormick-Mathers Publishing Company, Box 2212 Wichita 1, Kansas
McGraw-Hill Book Company, 330 West 42nd Street, New York 36, New York
Manter Hall, 71 Mt. Auburn Street, Cambridge, Massachusetts
Charles E. Merrill Books, 400 South Front Street, Columbus 1, Ohio
Mission Press, Los Angeles, California
New American Library, 501 Madison Avenue, New York 22, New York
Noble and Noble Publishing Company, 67 Irving Place, New York 3, New York

Odyssey Press, Inc., 114 Fifth Avenue, New York 3, New York
F. A. Owen, Danville, New York
Oxford University Press, 114 Fifth Avenue, New York 11, New York
Palmer Company, 349 Lincoln Street, Boston, Massachusetts
Permabook, See Pocket Books, Inc.
Pocket Books, Inc., 630 Fifth Avenue, New York 20, New York
Prentice-Hall, Inc., 70 Fifth Avenue, New York 11, New York
G. P. Putnam's Sons, 210 Madison Avenue, New York 17, New York
Rand McNally, 8255 Central Park Avenue, Skokie, Illinois
Reader's Digest Educational Service, Pleasantville, New York
Ronald Press Company, 15 East 26th Street, New York 10, New York
Row, Peterson and Company, 1911 Ridge Avenue, Evanston, Illinois
Scholastic Book Services, 33 West 42nd Street, New York 36, New York
Science Research Associates, 57 Grand Avenue, Chicago 10, Chicago
Scott, Foresman and Company, 433 East Erie Street, Chicago, Illinois
Charles Scribner's Sons, 597 Fifth Avenue, New York 17, New York
Stanford University Press, Stanford, California
Steck Company, Box 16, Austin 61, Texas
Syracuse University Press, Box 87, University Station, Syracuse, New York
Teachers College, Columbia, Bureau of Publications, 525 West 120th Street, New York 27, New York
University of Michigan Press, Ann Arbor, Michigan
George Warr, 103 North Main Street, Ann Arbor, Michigan
Washington Square Press, 630 Fifth Avenue, New York 20, New York
Webster Publishing Company, 1808 Washington Avenue, St. Louis 3, Missouri
Wilcox and Follett, 1255 South Wabash Avenue, Chicago 5, Illinois
H. W. Wilson Company, 950 University Avenue, New York 2, New York
John C. Winston Publishing Company, 1010 Arch Street, Philadelphia 7, Pennsylanvia
World Book Company, 313 Park Hill Avenue, Yonkers, New York